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EXTRACT

From an Act prescribing Rules for the Government of the State Library, passed March 8th, 1861.

SECTION 11. The Librarian shall cause to be kept a register of all books issued and returned; and all books taken by the members of the Legislature, or its officers, shall be returned at the close of the session. If any person injure or fail to return any book taken from the Library, he shall forfeit and pay to the Librarian, for the benefit of the Library, three times the value thereof; and before the Controller shall issue his warrant in favor of any member or officer of the Legislature, or of this State, for his per diem, allowance, or salary, he shall be satisfied that such member or officer has returned all books taken out of the Library by him, and has settled all accounts for injuring such books or otherwise.

SEC. 15. Books may be taken from the Library by the members of the Legislature and its officers during the session of the same, and at any time by the Governor and the officers of the Executive Department of this State who are required to keep their offices at the seat of government, the Justices of the Supreme Court, the Attorney-General and the Trustees of the Library.

JAN. 1, 1870—Price Reduced to $4, and name of paper abreviated to "Scientific Press."

Mining and Scientific Press Circular, 1869.

U. S. AND FOREIGN

PATENTS

Caveats,

PATENT LAW

And the Rights of Inventors.

Dewey & Co.,

Patent Agents and Publishers

MINING AND SCIENTIFIC PRESS.

OFFICE 414 CLAY ST., SAN FRANCISCO.

BRANCH OFFICES IN

WASHINGTON, D. C., LONDON,
PARIS, MELBOURNE,
AND IN OTHER FOREIGN CITIES.

Foreign Patents.

In addition to American patents we secure, with the assistance of co-operative agents, claims in all foreign countries which grant patents, including Great Britain, France, Belgium, the Netherlands, Prussia, Austria, Russia, Spain, British India, Saxony, Sardinia, Norway, Sweden, Mexico, Victoria, Baden, Bavaria, Holland, Denmark, Italy, Portugal, Cuba, Roman States, British India, Wirtemburg, New Zealand, New South Wales, Queensland, Tasmania, Brazil, New Granada, Chile, Argentine Republic, AND EVERY COUNTRY IN THE WORLD where patents are obtainable.

Our schedule prices for obtaining foreign patents, in all cases, will be as low as those of any other reliable agency.

We *can and do* get foreign patents for inventors in the Pacific States from two to six months (according to the location of the country) SOONER than any other agents.

Many valuable and important inventions of Americans are being yearly surreptitously patented in foreign countries, some of which governments allow it, thus debarring those who have valuable inventions from their rights.

Assignments.

We make out assignments in the most substantial legal and improved forms, record the same in the Patent Office at Washington, and return the papers to the assignee, at a total cost of $5.

Assignments of extra length or of a special character, will be made out and recorded on the most favorable terms.

Assignments already made will be examined and opinions rendered regarding their validity, and the assignments recorded, when desired, for a moderate fee.

Re-Issues.

When, through "inadvertence, accident, or mistake," an *insufficient* or *defective* patent has been issued, the defects in the Specification and Claims can be remedied by a *re-issue*. In order to obtain this, the inventor, or the holders of the patent, must surrender the patent, and file an amended specification and drawings, and a statement specifying the ground for asking for a re-issue. Re-issues are generally applied for after it has been found that the patent could not withstand litigation. It is, therefore, especially desirable that the new Specification and Claims should be prepared with great care and skill. Terms liberal in these cases.

Unsuccessful Applicants

Who are not satisfied with the reference sent to them from the Patent Office, or are dissatisfied with the transactions of their agents, can have their cases thoroughly examined and reported on, by sending us their power of attorney so to do, for a small expense, at most. This can be done without revoking the power of other agencies or in any manner prejudicing the interests of the inventor. Cases which have been resting a long time in the Patent Office have been successfully undertaken by us to the great satisfaction of inventors. Parties who know themselves to be the first and true inventors of valuable inventions should not give up their chances, without investigation, simply because patents have been wrongfully issued to others.

Our Office.

The office of the MINING AND SCIENTIFIC PRESS is located in the second story at No. 414 *Clay* street, north side, just below Sansome. Here we have spacious accommodations, with our patent rooms, editorial room, counting room, and newspaper printing office,—all conveniently arranged and connected, and our facilities for dispatching business correctly and economically, better than ever before. Don't forget the number—414 Clay street, below Sansome.

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Home Counsel.

We are frequently consulted by persons who have rejected cases which they sent months previous through distant agencies—(hastily paying their first and last government fees, expressage, and extraordinary charges of agents)—when we could have shown in the start precisely similar drawings and descriptions in the Patent Office Reports in our office, thus saving such applicants their useless expenditure of money and their long suspense.

We invite the acquaintance of all parties connected with inventions and patent right business, believing that the mutual conference of legitimate business and professional men is mutual gain. Parties in doubt in regard to their rights as assignees of patents, or purchasers of patented articles, can often receive free advice of importance to them, from a short call at our office.

In Our Library

We have the only complete set of U. S. Patent Office Reports (from 1844) on this coast; a full record of all patents issued since 1790; Record of British patents from 1801, and full files of scientific papers containing illustrations and list of U. S. Patent Claims; Illustrated Mechanical, Philosophical, and Law Books and Reports, of the very highest authority, forming the only extensive library of patent works west of the Rocky Mountains. We offer patentees and inventors the free use of these books at our office. The files of the MINING AND SCIENTIFIC PRESS contain the claims of the Pacific Coast Patents, and many illustrated descriptions of the same. We have also in our office *full copies* of a large majority of the patent cases emanating on the Pacific Coast.

Interferences.

INTERFERING APPLICATIONS are conducted with spirit and ability on the most favorable terms, by DEWEY & CO. It sometimes happens that an applicant finds his invention has been patented by another, but more recent discoverer. In such cases the prior discoverer can obtain full right to the invention if he can produce tangible evidence of priority.

When patentees are threatened with interference they should consult able and responsible agents before they either allow themselves to be backed down from their rights, or trespass upon the rights of others. We will always counsel and advise in such cases upon the most reasonable terms—often saving clients heavy damages and exorbitant fees.

Copies of Patents.

Full copies of U. S. Patents will be furnished in the shortest time possible, at favorable rates.

Copies of the claims of U. S. Patents will be furnished without delay, from the reports in our office, at trifling expense. State the name of patentee and assignees, and date and No. of the patent, if possible.

Copies of Patents in foreign countries expeditiously furnished at moderate rates.

EXTENSIONS.—U. S. Patents issued prior to 1861, are subject to extension for seven years, provided some ostensible reason can be shown the Government for so doing. Patentees who have, from circumstances beyond their control, been deprived of the full benefit of their patents for any considerable time, are usually successful in obtaining an extension of the same, when presented through our agency.

INFLUENCE AT WASHINGTON.—No inventor can possibly have better facilities or more influence (through friends or agents, at Washington or elsewhere), to secure their patents sooner or more surely, than ourselves. Our influence at Washington is unrivalled, so far as success for applications from the Pacific States and Territories are concerned.

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One of the best means—and the cheapest, too—for eliciting attention to a new invention, is that of illustrating and describing it in the columns of the MINING AND SCIENTIFIC PRESS. To do this in the case of a meritorious improvement (and none other will be accepted), will cost our patrons no more than the price of a first-class engraving.

Superior Engraving Done.

We also take especial pains in furnishing engravings and electrotypes of superior merit, of all kinds, at fair rates, and tender our patrons the benefit of our practice and experience, by advice and assistance, in getting up their circulars, advertisements, etc.

With a poor representation we desire to have nothing to do, as it would be calculated to injure both the inventor and ourselves.

Too many ingenious inventors lose the product of their genius and labor by not bringing their improvements conspicuously or plainly enough before the public—the general reading public.

Reasons for Success.

We would especially call the attention of the inventive public to the fact that our Patent Agency is taking out a larger number of Patents than any other agency west of the Mississippi River. We do our work promptly and thoroughly, and refer to our standing amongst inventors as an evidence of our success in our special department. Our work is all done inside of our office, BY COMPETENT AND RELIABLE PERSONS, who have been for years interested and associated with us. We therefore are not compelled (like many agencies) to trust valuable and important inventions promiscuously to outsiders, to have part of the case prepared, but inventors can depend that, from the time their cases are first placed in our office, they are kept with proper secrecy until full rights are secured in the Patent Office in Washington. This is an important point in the proper prosecution of Patent business. It is a notorious fact that some prominent agencies trust a considerable portion of their cases to apprentices and amateurs. A deficiency or want of attention to the small affairs of any kind of business will often prove as harmful as a flagrant violation of the most important rules which govern and control it.

Volunteer Compliments.

From an endless series of appreciative testimonials and frank acknowledgements, we give the following:

SAN FRANCISCO, May 5, 1869.—MESSRS. DEWEY & CO. Gentlemen:—Allow me to express to you many thanks for services rendered me in procuring my patent, which has just come to hand. I would also say that your work has been faithfully done, and your advice and representations have in all cases been honest and truthful.

Respectfully, GEO. INWOOD.

SAN FRANCISCO, April 19, 1869.

MESSRS. DEWEY & CO., Patent Agents.—*Gentlemen:*—Allow me herewith to tender you my sincere thanks for the efficient assistance you have rendered me in securing my patent, and other papers, as well as the promptness and energy displayed by you in our business transactions. Very respectfully yours, C. E. JAYCOX.

We have had frequent occasion to have business relations with the patent agency connected with this establishment, and have had nothing left to desire in regard to it. Fidelity, promptness and courtesy, soon arranged everything for us to our complete satisfaction. Having had frequent delays at Washington while in that city, we have been surprised at the promptitude with which some of our friends obtained their patents through the agency of MESSRS. Dewey & Co.—*S. F. Spiritual Light.*

GRASS VALLEY, Dec. 2, 1868—*Messrs Dewey & Co:*—Having received the patent for Symons & Co's Tossing and Refining Concentrator, through your Agency, we return our sincere thanks to you for your unrivalled success. Yours, respectfully, SYMONS & HARRY.

LEXINGTON, April 3, 1869.

DEAR SIRS:—The Letters Patent have just come to hand. For the prompt and business-like manner with which you have put the matter through, please accept my thanks. GEO. W. TEASDALE.

To DEWEY & CO., Publishers M. & S. Press.

STOCKTON, April 8th, 1869.

MESSRS. DEWEY & CO.:—Your favor of the 6th inst., accompanying patent for improvement in horse shoes, is received. I beg you will accept the earnest assurance of my gratitude for your kind assistance and valuable services. Very truly yours, W. R. WATSON.

DEWEY & CO.,
Mining and Scientific Press Patent Agency,
No. 414 Clay St., San Francisco.

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If you are an Inventor, Patentee, Miner, Farmer, Manufacturer, Mechanic, or a progressive Student or Artisan in any Industrial or Professional Calling in the Pacific States or Territories, you are doing yourself irreparable injustice, if not already a subscriber and reader of the MINING AND SCIENTIFIC PRESS.

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Its scope and purpose are expressed in the title, and we recommend miners and mechanics in particular to subscribe for it. Terms $5 per annum, in advance.—*Trinity Journal, March 13th.*

MINING AND SCIENTIFIC PRESS.—This useful and scientific journal has entered upon its eighteenth volume.

To the scientific, mechanic, and practical men of all classes it is almost invaluable; and we are glad to learn that it is increasing in patronage every day.

The publishers, Dewey & Co., San Francisco, say the present volume shall be superior in all respects to its predecessors.

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MINING AND SCIENTIFIC PRESS.—This excellent scientific journal has entered upon its eighteenth volume.—*Chico Courant, Jan. 15th.*

THE *Mining and Scientific Press* should have an extensive circulation in every mining community on the Coast.—*Placer Herald, Dec. 19.*

W. FRANK STEWART is Dewey & Co's accredited agent for the Patent business in this city, and will attend to their affairs in that specialty.—*San Jose Mercury.*

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MINING AND SCIENTIFIC PRESS has become almost indispensable to the miner and machinist, and is well deserving of the patronage which we are pleased to learn it receives.—*Mariposa Mail, Jan. 10th.*

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THESE gentlemen not only print a first-class scientific and mining journal, but are also trustworthy Patent Agents, and doing much towards the inventive business of this coast.—*San Jose Mercury.*

THE MINING AND SCIENTIFIC PRESS commenced a new volume with the new year. It is a credit to the State, and to the mechanic or miner, is a great source of valuable information. It has every appearance of prosperity, and we hope it may continue growing in wealth and influence.—*Pajaronian.*

WE CONSIDER THE MINING AND SCIENTIFIC PRESS the most valuable mining and mechanical newspaper issued in the United States. Dewey & Co., publishers, are also solicitors of foreign and American patents and conduct patent cases of every kind. We guarantee that all business confided to them will be carefully attended to, and we further believe that every miner, mechanic, and scientific man should have their valuable paper.—*Auburn Stars and Stripes.*

NEW VOLUME.—The MINING AND SCIENTIFIC PRESS has entered upon another year's work looking improved and promising. This paper is devoted to the interests of the scientific world, and to the miner and mechanic is almost invaluable.—*Gilroy Advocate.*

TO MINERS.—William H. Murray, traveling agent for the Mining and Scientific Press, published by Dewey & Co., of San Francisco, is in town soliciting subscriptions for that paper. To the intelligent miner, a paper like the *Press* is particularly valuable, keeping him posted on the latest discoveries in reduction of ores, new machinery, etc.—*Grass Valley National.*

MINING AND SCIENTIFIC PRESS.—We look upon this paper as one of our most valuable exchanges, in fact it deservedly stands at the head of all publications embracing mining, scientific and mechanical subjects, and contains much miscellaneous matter of interest, and is a gem of neatness. The PRESS is published by Dewey & Co., San Francisco, and at its present low price of five dollars per annum, should be patronized by every one, but more especially by miners, mechanics and inventors who wish to pursue their avocations with intelligence and economy.—*Tidal Wave, Idaho.*

THE MINING AND SCIENTIFIC PRESS has entered upon its XVIIth Volume. It has donned a new-style hat; or, in newspaper parlance, a new heading, which gives it the solid, scientific look it merits. Other improvements typographical are also noticeable. No call for improvement in its matter.—*Amador Ledger, July 18th.*

THE MINING AND SCIENTIFIC PRESS, which commenced its seventeenth volume on the 4th, comes to us with a newly engraved head, and presenting otherwise its usual tasteful appearance. We take this occasion to say that the PRESS is one of the best papers of the kind in the United States, and every miner and mechanic in the State, as well as the business man, who would keep posted on our industrial resources, should have its name on its subscription books.—*Nevada Gazette.*

Subscription, $5 per annum; $3 for six months—in advance. Sample copies free.

DEWEY & CO.,
U. S. and Foreign Patent Agents,
No. 414 Clay st., San Francisco.

(TURN OVER.)

Mining and Scientific Press Patent Circular.

To Inventors

ON THE

Pacific Coast.

Messrs. DEWEY & CO.

Take occasion to call your attention to the following rules, regulations and suggestions relative to the obtaining of LETTERS PATENT of the United States:

Established in 1860.

Our business has been long and successfully practiced, and we are thoroughly responsible for the confidence and valuable trusts placed in our charge. Our advice can always be relied upon as correct.

The principal portion of the patent business of this coast has been done, and is still being done, through our agency. We are familiar with and have full records of all former cases, and can more correctly judge of the value and patentability of inventions discovered here, than any other agents.

Steps Necessary to Procure a Patent.

The FIRST thing required is a model, if your invention can be represented by one. It is not only immediately necessary in preparing the papers, but the law demands that the inventor shall, in all cases, furnish a model, which must not exceed twelve inches in any of its dimensions. A model of less size will answer when more convenient. It should be neatly made, of hard wood or metal, or both, and varnished or painted; the name of the inventor and the name of the article should be engraved or painted on it in a permanent manner.

When the invention consists of an improvement on some known machine, a full working model of the whole will not be necessary. It should be sufficiently perfect, however, to show, with clearness, the nature and operation of the invention, and the relation of the new to the old parts of the machine.

As soon as the model is ready, it should be carefully boxed and shipped by express, or otherwise, to our address, namely: DEWEY & CO., *Mining and Scientific Press, San Francisco.* Prepay expenses and send express receipt to us by mail.

A full description must also be sent with the model, embodying all the ideas and claims of the inventor respecting the improvement, describing the various parts and their operation.

Simultaneously with the model, the inventor should send us the first instalment of the Government fee, fifteen dollars. The money may be forwarded either by express with the model, or by registered letter, post office order, or by draft on San Francisco, payable to our order. Always send a letter with the model, and with the remittance, stating the name and address of the sender. On receipt of the model and Government first fee of $15 in currency, the case is duly registered on our books, and the application proceeded with as fast as possible. When the documents are ready we send them to the inventor by mail, for his examination, signature and acknowledgement before a Notary Public or Justice of the Peace, with a letter of instruction, etc. Our fee for preparing the case is then due and will be called for. The case will then be presented to the Patent Office, and as soon as the patent is ordered to be issued the Government last fee of $20 in currency will be required. The law states that every patent shall be dated as of a day not later than six months after the time at which it was passed and allowed, and notice thereof sent to the applicant or his agent. And if the final fee for such patent be not paid within the said six months, the patent shall be withheld, and at the expiration of two years the invention therein described shall become public property as against the applicant therefor.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separate ingredients, sufficient to make the experiment, (unless they are of a common and well known character), and also of the manufactured article itself must be furnished, with full description of the entire preparation.

For Processes, frequently no model or drawings are necessary. In such case the applicant has only to send us an exact description, and what it is desirable to claim.

For Designs no models are necessary. Duplicate drawings are required, and the specifications and other papers should be made up with care and accuracy. In some instances two photographs, with the negatives, answer well instead of drawings.

Inventors who do business with us will be notified of the state of their application in the Patent Office, when it is possible for us to do so. We do not require the personal attendance of the inventor, unless the invention is one of great complication, usually the business can be well done by correspondence.

The usual time required to secure a patent, when the case is conducted at our agency, is from one to two months. We sometimes get them through in two weeks. In rare cases, however, owing to delay on the part of Government officials, the period is sometimes extended for months. We make a special point to advance our cases as rapidly as possible, and have been successful in obtaining patents for this coast more surely and speedily than any other agency in the United States.

Letters Patent and Who Can Obtain them.

A patent is an open letter, embodying all the language of an inventor or his agent, contained in the specification, without alteration, and is granted to citizens of the United States, or Foreigners, male or females, (including minors), and is signed by the Secretary of the Interior and the Commissioner of Patents, with the seal of the Patent Office affixed. Its jurisdiction is for the whole United States, for the term of seventeen years.

Citizens of Canada and Nova Scotia have to pay a fee of $500 for patents in the U. S., owing to discriminations made against Americans.

Important Advantages.

Some of the advantages to be obtained by patronizing us may be enumerated as follows:

Inventors on this coast having their applications for patents made out through our agency, can sign their papers at once, and thus secure their rights *much sooner* than by trusting the same to distant agencies, situated at New York or Washington.

Many inventions on this coast are for objects and purposes but little understood by parties at Washington or other parts of the East. Our mining machinery, processes and operations are best understood by those familiar with their use. A personal verbal explanation is oftentimes of important service, and enables us to be more successful than agents generally.

Remittances of money made by individual inventors to the Government sometimes miscarry, and it has frequently happened that applicants have not only lost their money, but their inventions also, from this cause and consequent delay. We hold ourselves responsible for all fees entrusted to our agency.

By an able and faithful representative of our firm in Washington, our clients' applications are guarded against indifferent examination, unfair treatment in any contingency, and hazardous delays.

Patents for inventors on this coast are actually secured cheaper through our agency than any other, however flattering may be the inducements offered at the commencement by others.

Extensive practice gives us great facilities, securing regularity in the transaction of our business, which extends to EVERY COUNTRY IN THE WORLD where patent laws exist.

We assist in bringing valuable inventions to the general notice of the public throughout the Pacific Coast by illustration or description in the columns of the MINING AND SCIENTIFIC PRESS.

Confidential Advice.

Those who have made inventions and desire to consult with us respecting the same, are cordially invited to do so. We shall be happy to see them in person at our office, or to advise them by mail. In all cases they may expect from us an honest opinion. For these consultations, opinion and advice we make no charge. A pen-and-ink sketch and description of the invention should be sent together with a stamp for return postage. Write plain, do not use pencil or pale ink; be brief.

Remember all business committed to our care, and all consultations, are kept by us secret and strictly confidential. Our permanent business interests demand, as it were, a sacred compliance with our obligations as solicitors, and in reference to our strict fidelity in this respect we refer to one and all of the thousands of inventors and patentees on this coast who have patronized us.

What Claims can be Patented?

A knowledge of Ancient and Modern Mechanics and familiarity with American and Foreign patent issues and rejections, enables us to determine in a measure in all cases what can be patented, and how much can be claimed as new and novel, and be covered by Letters Patent. This is one of the most difficult questions encountered by both old and new inventors—one in which an experienced counsel is of great service.

A majority of the Patents issued during the past eight years to Pacific Coast inventors have been secured through our Agency; consequently we can more readily and correctly advise new applicants than any other agent.

Expense of Applying for Patent.

The Government fee, on filing an application for a patent in the United States, is fifteen dollars; and if the patent is allowed, twenty dollars additional is required. If rejected, the first fee of fifteen dollars is all that is demanded.

To the foregoing official fees must be added fees for preparing the various documents and expense of drawings. Our charge for preparing the documents for a case, presenting it to the Government, and attending to all business connected with it, is $25 and upward. For cases demanding extra work and attention, only a reasonable fee in accordance with the services required, to do full justice to the case, will be charged.

Following is the list of Government fees, payable in currency:

On every caveat	$10
On every application for a patent, for seventeen years	15
On every application for a design, for 3 yrs and 6 mos	10
On every application for a design, for seven years	15
On every application for a design, for fourteen years	20
On issuing each original patent	20
On filing a disclaimer	10
On every application for a re-issue	30
On every additional patent granted on a re-issue	30
On every application for an extension	50
On the grant of every extension	50
On appeal to the Examiners-in-chief	10
On appeal to the Commissioner from Examiners-in-chief	20
On every appeal to the Judges of Circuit Court, D. C.	25

By Telegraph.

In cases of immediate importance we can have their progress reported by telegraph, so that applicants know immediately the result of the examination and decision of the Patent Office. We also make examinations by telegraph regarding the patentability of inventions; examine patent assignments on record at Washington; obtain copies of patents or claims, and also derive other information desired instantly from the Patent Office.

Caveats.

A caveat is a description of the invention designed to be patented, lodged in the Patent Office before the patent is applied for, and while the inventor is perfecting his design. When *properly* made, it operates as a bar to applications respecting the same invention from any other quarter; but when improperly done, it is inoperative by reason of such defect. The Patent Office always returns a receipt for caveat papers, but does not seek to point out its incorrectness, unless there be some glaring defect.

Our fees for filing caveats are from $20 to $25. This covers the entire expense, including Government fee.

If worth filing at all, these cases should be prepared with very great care and caution.

To enable us to prepare caveat papers, we only require a sketch and a full and comprehensive description of the invention.

No model is required in filing a caveat. For this reason, and the fact that the cost is much less than for an application for a patent, it is in many cases advisable for American inventors to avail themselves of the privileges of our caveat system.

DEWEY & CO.

Mechanical Movements, from Dewey & Co's Free Illustrated Pamphlet.

PLATE I.

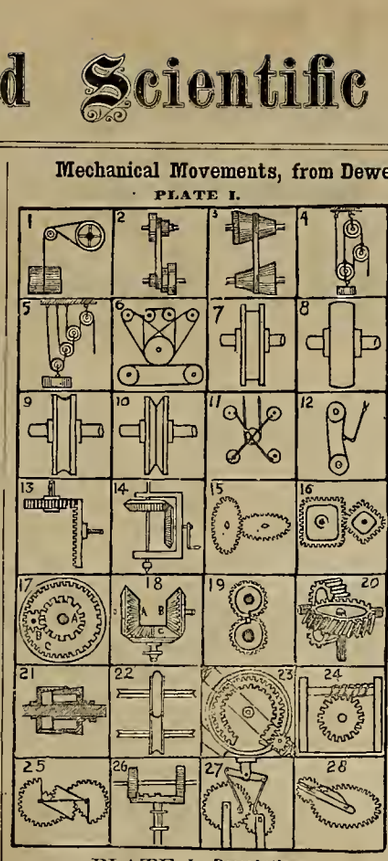

PLATE V.

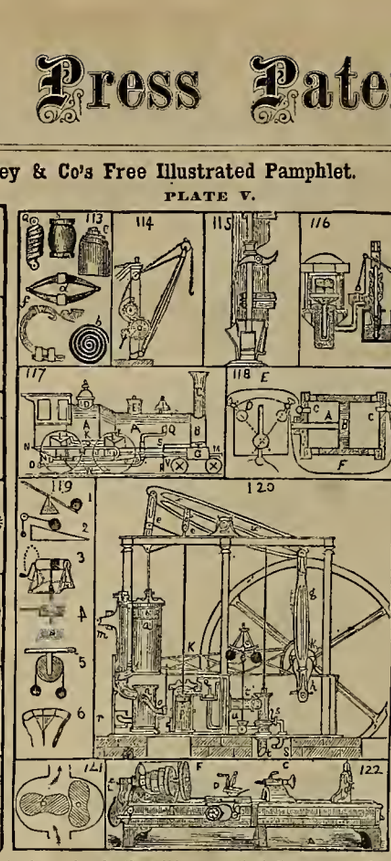

PLATE I.—Description.

1. Transmitting motion from a shaft at right angles to another, by means of two guide pulleys.

2 Cone pulleys for varying the speed of lathes, etc.

3. Cone-pulleys. Used in cotton machinery, affording a gradually increased or diminished speed.

4. A system of pulleys known as Spanish hartons.

5. Compound pulley. The effect of the whole will be equal to the number 2, multiplied by itself as many times as there are movable pulleys in the system.

6. Belts and pulleys.

7. A flange pulley for a flat belt.

8. A plain pulley for a flat belt.

9. A concave-grooved pulley for a round hand.

10. A smooth surface V-grooved pulley for a round hand or steel wire.

11. Several wheels, by connecting-rods driven from one pulley.

12. Lever with hearing roller to tighten hands.

13. "Crown-wheel" on the right gearing, with a "spur-gear."

14. Beveled gear.

15. Elliptic gears, for varying speed.

16. Rectangular gears, producing a varying speed.

17. Different velocity given to two gears, A and C, on the same shaft, by the pinion B.

18. A uniform intermittent rotary motion in opposite directions is given to the bevel-gears, A and B, by means of the mutilated bevel-gear, C.

19. Scroll-gears for obtaining a gradually increasing speed.

20 Oblique toothed wheels.

21. Friction cones. (Sectional view.)

23. Friction pulleys.

33. Revolving into reciprocating motion, by an endless segmental rack and pinion, the axle of which revolves and slides in a slot toward and from the rack. This rack is secured to a disk, and a rope round said disk extends to the body, to which a reciprocating motion is to be imparted.

24. Worm and worm wheel.

25. Transmitting motion, with three different velocities, by means of toothed segments of unequal diameters.

26. For similar purpose as 18.

27. Variable alternating traverse of the bar by the unequal gear wheels.

28. Revolving motion by a circular sliding pinion gearing in a elliptical cog-wheel.

PLATE V.—Description

113. The principal and most common variety of springs used in machinery: *a*, spiral spring; *h*, india rubber spring; *e*, the volute spring, made of sheet-steel wound, cone-shaped; *d*, elliptic spring; *f*, the C spring; *b*, coiled or watch-spring.

114. Common Derrick crane.

115. Sectional side view of a quartz mill battery. The mortar at the bottom is partly V-shaped, containing the die setting on the bed; stamp resting on the die; stem extending upward through the cross-timbers or guides; tapped on the upper part of stem resting on the cam that raises and drops the stamp, stem and tappet together at each revolution.

116. Hydrostatic press. Water forced by the pump on the right through the small pipe into the ram cylinder, and under the solid ram on the left, presses up the ram. The amount of force obtained is in proportion to the relative areas or squares of diameters of the pump-plunger and ram. Suppose, for instance, the pump-plunger to be one inch diameter and the ram thirty inches, the upward pressure received by the ram would be 900 times the downward pressure of the plunger. The same principle is applied in hydrostatic jacks, and for massive brick buildings.

117. Locomotive engine. The boiler, A A, and the engines, of which G is one cylinder, rest on the frame which extends from N to M, and contains the jaws and driving-boxes under the springs, as shown. The frame rests in front on the springs of the forward truck, of which X X are the wheels, and hangs behind on the equalizing beam K, extending to the springs. The circle H H represents the trailing-driver, and J J the leading-driver. B is the smoke-box, C the chimney, W the ash-pan, E the sand-box, and D the steam dome just forward of the cab. The line V G represents the piston-rod, U V the connecting-rod, and U U the parallel rod. T is the steam-chest, containing the valve; T S the valve-rod, and S R the rocker arms on the rock-shaft. The link-motion extends between the forward driving-shaft and the arm R, and, with R S T, forms the valve-gear. The pumps P (forward of leading-driver) draw water from the tender through the feed-pipe O P, and force it into the boiler through the check-valve Q.

118. Improved Lenoir gas engine—a French invention. The piston-head B is represented midway of the cylinder; A, piston-rod; a gas jet is introduced with a quantity of air sufficient for combustion at each end of the cylinder alternately, and ignited by an electric spark by conducting wires E and F at c c. The electric spark is generated at the proper moment by the poles of the galvanic battery becoming momentarily connected by revolution at D.

119. The six mechanical powers which are the basis of all mechanical movements and combinations: 1, lever; 2, inclined plane; 3, wheel and axle; 4, screw; 5, pulley; 6, wedge.

120. Condensing beam-engine. *a*, steam-cylinder; *b*, piston; *c*, upper steam-port or passage; *d*, lower steam-port; *e e*, parallel motion; *f f*, beam; *g*, connecting-rod; *h*, crank; *i i*, fly-wheel; *k k*, eccentric and its rod for working the steam-valve; *l*, steam-valve and valve-casing; *m*, throttle-valve; *n*, condenser; *o*, injection-cock; *p*, air-pump; *q*, hot-well; *r*, shifting-valve, for creating a vacuum in the condenser, previous to starting the engine; *s*, feed-pump for supplying the boilers; *t*, cold water pump for supplying the condenser cistern; *u*, governor.

121. Sectional view of Root's patent blower for furnaces, etc. Air is drawn in through the lower pipe and forced out in the direction indicated by the arrows by the rapid revolution of the double vanes which closely follow each other and the inner side of the shell or case containing them.

122. Engine lathe. Upon the shears, or framing, A, stand the fixed head-stock, M, (which carries the spindle and face-plate, F,) the movable tail-stock, C, and the compound rest, D, which is moved longitudinally by the lead-screw, actuated by the feed, L, and upon which stand the tool-stock and tool-rest.

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DEWEY & CO.,
Publishers and Patent Agents.
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SAN FRANCISCO, SATURDAY, JULY 3, 1869.

VOLUME XIX. Number 1.

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FARMING AND GARDENING.—Deformed Cattle; Crystallizing Flowers; Artificial Coloring of Plants; Cultivated and Utilizing of Oats; Horticulture in Greenland, etc.
MINING SUMMARY.—California, Arizona, Colorado, Idaho, Nevada, New Mexico, Utah and Wyoming.

Vorbe's Improved Combination Lock.

Combination locks are the perfection of mathematical and mechanical science. Unless the number, the cabalistic *open sesame* be known, the safe remains closed even to the confidential clerk in the office. But continued guessing and trying may, in the ordinary combination lock, succeed. Mr. Vorbe, of San Francisco, has brought mathematical science to the rescue, and made this next to impossible—or the work of a lifetime, and therefore not very likely to be undertaken. The graduated disks H, I, J, are set to any desired number, as in all the combination locks; and the mathematics of this very ingenious but simple invention is such that on missing the correct combination *once*, from carelessness or accident, a second attempt is practicable immediately; but if that fails too—evincing an unmistakable ignorance of the secret number,—the lock seems almost to exercise the intelligence of reason, and to become suspicious, for it will then be impossible to make another combination that could draw the bolt short of 50,000 turns of the knob, E, an eight or ten hours' job; there being possible, in all, 1,000,000 combinations. Such arrangement makes it a ridiculous undertaking to tamper with Mr. Vorbe's lock under any circumstances—and the holder of the secret number is, accordingly, absolutely secure.

So intricate is the mechanics of combination locks that those who are not familiar with the subject could not easily be made to comprehend the interior working, even from an engraving; though the essential parts are here shown in the sectional view. The operation of the lock may be described as follows :

Before locking the safe the small hands 4, 5, 6, 7 (Fig. 2) on the back of the lock, are turned around till they point to the dots shown on the lock plate outside their periphery ; this brings the wheels Q, R, S, T, into a position where, if moved, the pin of Q is ready to act on R, the pin of R on S, the pin of S on T, and one of the pins T on the lever Z.

To unlock the safe, the combination being known as 11, 70, 49, the knob E, (Fig. 1) is turned till the number 11 on the disk J corresponds with the index G′ on the plate K. The knob E is then turned back till the number 70 on the disk I corresponds with the mark *e* of the washer *j*, on the same line with the index G′. Then the knob is turned forward till the number 49, on the disk H, corresponds with the mark *e′* of the washer *i*. The key M is then inserted in the key-hole O′, in the knob F, so that it will hold the arms 1, 2, 3 opposite the grooves *w*′, of the segment W, (Fig. 1) and the knob F is turned, withdrawing the bolt U.

The setting of the numbers correctly brings the slots *m*′ (Fig. 2) in the tumblers, into a line with the sliding plate *r*′, so that as the knob

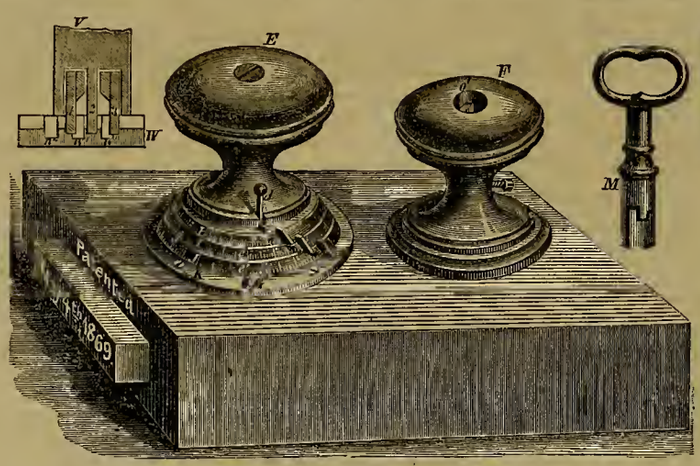


FIG. 1.—VORBE'S COMBINATION LOCK.

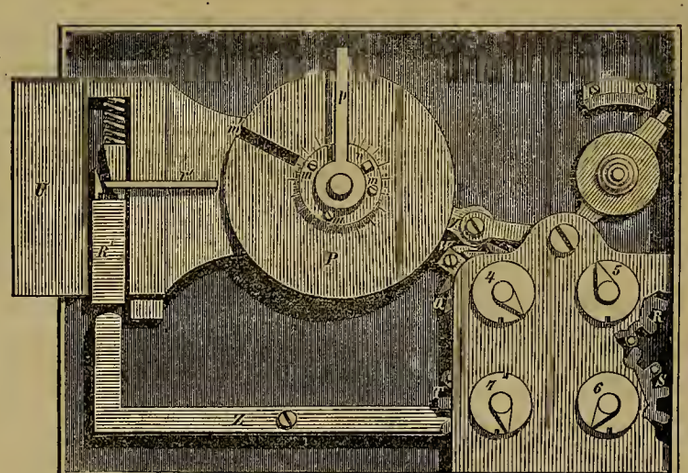


FIG. 2.—VORBE'S COMBINATION LOCK—Sectional View.

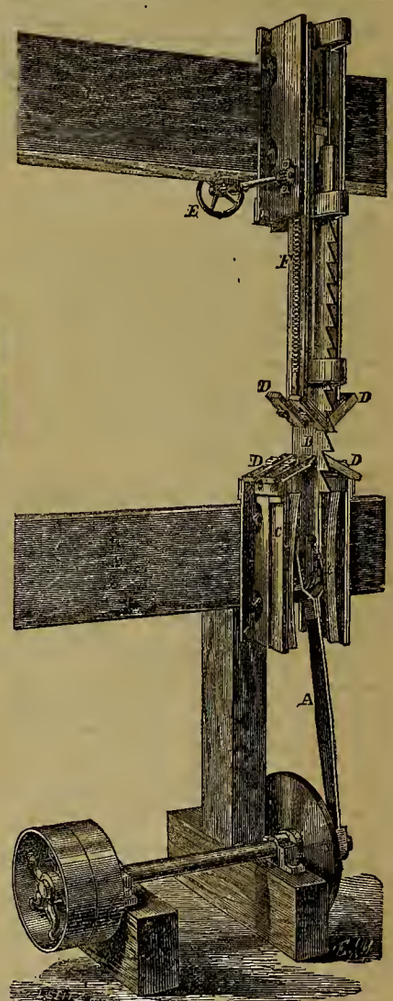
F is turned, and the bolt withdrawn, the plate *r*′ enters the line of slots in the tumblers. But if the combination be incorrectly made, the slots *m*′ will not all be in a proper line, and when the attempt is made to draw the bolt, the plate *r*′ strikes the edge of some one of the tumblers, and releases the stop R′ in the bolt U, which flies out, and makes it impossible to move the bolt (See Fig. 2.) It will then be necessary to pull down the little bolt *d* in the knob E, and turn the knob and the tumblers till the lug *n*, on the tumbler P, shall move the arm *p*, thus turning the arm W and the wheels Q, R, S, T, the last one, T, moving the lever Z, and pressing the stop R back into place. If a mistake be made a second time, the stop R′ cannot be again forced back till the toothed wheel T has been turned half around, which would necessitate about 50,000 turns of the knob E.

Action of the Muley Saw—Anderson's Hangings.

That a third more execution can be effected with at the same time a third less power, by the more method of hanging the saw in the old-fashioned mill, appears somewhat incredible at first glance, but not so after comprehending what mechanical principles are involved, and how the same have been regarded to the best working advantage by Mr. Anderson in his patent saw-hangings, below described. Concerning the justice of such a claim as the above, there is, at least, a large showing of very cordial and unqualified testimony; but persons interested may inform themselves to their better satisfaction, on that point, through the agents of the Anderson patents, Messrs. Fuller & Co., No. 109 Montgomery street.

The common saw, hung without reason's adjustments, works to a great disadvantage in choking during the upward motion, as appears evident on watching the manner in which it will throw up with it the dust. As much power is required for this non-executing, upward motion, as for the downward cut. All this wasted power is saved by the following ingenious yet very practicable method of throwing back the saw for every cut :

The pitman, A, is not connected, as in the ordinary method, directly to the saw, B, but the buckle which connects the saw takes hold of the wrist within the fork of



MULEY SAW—ANDERSON'S HANGINGS.

the upper end of pitman, A; the arms of the fork extending above the wrist to pivots working in the blocks that traverse the slides—thus making the pitman a lever having a long and short arm. This arrangement compels the lower end of saw to be vibrated back and forth, as the lower end of pitman describes a circle.

The "rake," or over-bang of the upper end of saw should always be in proportion to the feed carried, so that the saw will begin to cut the instant it begins to descend. In the ordinary upper muley, (when continuous feed is used) the sawyer is obliged to put in rake enough for his heaviest feed. Being unable to change the rake, except with a stoppage of their mill and a loss of time, it is seldom changed, and a larger log

[Continued on Page 12.]

Communications.

Written for the Mining and Scientific Press.

Account of Reveille and Adjoining Districts.

According to promise I will give you snch a description of this interior mining district, as my observetion, information, facts and figures will warrent.

Discovery—Water.

"Indian Jim" discovered this district in 1866. The principal ledge and first discovery in Hot Creek already bore his name. As Moses led the Israelites from the wilderness, so Indian Jim led the hankrupt miners and millmen of Anstin into this region of apparent mineral wealth. The district was organized October 2d, 1866. It is sitneted on the west side of Reilroed Velley, 110 miles south of Treesnre Hill. It is a dry, burnt, desolate-looking place. A little water can he had by digging—perhaps enongh can he concentrated in this menner to supply a 10-stamp mill. For milling nurposes, however, there is an abundence of water 12 miles distant, on the opposite side of Hot Creek Valley.

Alum.

As we approached the cemp from Twin Springs, the first ohject of interest that greeted our eyee was an alum hed or deposit—small knolls of vermillion-red color—separeted hy a small ravine. On the sides of the hanks, underneath the red cep or shell, the alum seems to form in flakes or crnsts, which drop down. In quality, it is from pnrest crystal to a dirty hrown eerthy color. In the little ravine is a hole ent a foot deep, which contains perfectly pure clear alum weter. Judging from the taste and "pucker" of the month it is es strong as a solution conld he made with cold water.

Fire Bricks or Red Adobes.

We found three persons making lsrge unburnt hricks ont of this red earth. They have the appeerance end herdness when dry of the ordinary fire hrick, except a little coarser for the want of proper grinding and preparation of materials, and being a little darker colored—abont ths color of a common hurnt brick. Mr. Nichols is using them in his asseying furnace, and they stand a white heat remarkahly well. As to what nse this red eerth and alum may be, we leave for others who are more cepahle of jndging to determine.

The Mines

Cover an area of about three by six miles —three mountains, known es North, South and Middle monntains, with depressions or sags between them. The manner in which they have been worked, would be a disgrace to their owners, if the circumstances under which they labored were not fully understood. The closing np, abandonment and removal of twelve out of thirteen mills of Austin, and in like proportion in other interior localities, constructed in times of excitement by nninteiligent and misdirected enterprise, disheartened capitalists from entering this remote field. The limestone formation of the district, agsinst which there has been great prejndice, until since White Pine has developed its wealth, increased the obstacles. The miners were poor while their mines were rich on the surfece. *They* had confidence in their permanent future productions. They have lived here "from hend to mouth." They *needed* rich ore to pay $100 per ton for hanling, and $45 for reducing at Austin, and yet to have a margin for supplies. They "gntted" their mines nnder the law of necessity, and have left npon them the worst possible face for the eye of capitelists.

There is almost every variety of silver mines in the district, from the two rich streaks of chloride to the broad and well-defined quartz ledges. While the prevailing formation is lime rock, there are vast dykee or croppings of quertzite, sometimes carrying in places more or less mineral, and in the neighhorhood of which are fonnd the best defined pay ledges. In other words, many of the mines show only pockets and streaks in the limestone, apparently without system or order, offering but little indncement or security for the investment of capitel, while others show larger streaks and deposits with like irregularity, yet sufficient in magnitude to fairly justify the expenditure of money to follow their varietions and trace them, if possible, into defined ledges. The third cless, however,—the large ledges of lower grade ore,—promises certain returns to those who shall invest their money. The "hig strikes" will prohahly he made among the "deposits," hut the surer fortune will come from the "hundred dollar rock."

The "Fisherman," the most notorions mine, on the northwest side of South Monntain, has heen badly worked and wears a had appearance. They cut into the ledge, scooped out ahont $15,000, and then run an incline straight away, down from the ledges, into solid limestone ehont thirty feet, then suspended work, leeving the ledge inclining upward from the top of the incline. There are large croppings at different points on the snpposed line of the ledge, to all appearances, as rich es where the first opening was mede. While it is probehle that there will he a vast amount of silver teken from this mine, still it rsquires money and *good mining* to determine whether it is rich surface deposit or e permanent trne fissnre vein. The surface rock will pay for regular and thorough development. But I prefer to rely upon statistics. A ton and a half crushed at Page's mill, Austin, worked at the rate of $1,632 per ton; five tons at the Oregon mill, worked $730 per ton; seventy tons in all averaged $400 per ton. One hundred and fifty tons on the dump worth $80 per ton.

The "Perk" mine on the Middle Mountain, is next in notoriety, and, like the "Fisherman," has been most slovenly worked, and finally left with hnt little or no pay ore in sight. Three lots of this ore shipped to Belmont, worked $780, $800 and $1,482 per ton. It must have more work done to give it apaying or business aspect. Whet has heen said as to the ineffiiciency or slovenly work in mining, applies to all the mines in the district. There is hardly one decent shaft, tnunel, or drift in the district, and yet there appears to be meny rich ledges which have heen a little opened.

"Indian Queen," a large well marked ledge two feet wide, worked $175 per ton. "Faxon end Elms," a parallel lode of same width, has about the same quality of rock.

The "Desert Queen" milled 7½ tons of ore at Anstin, peying $500 per ton. Twenty tons from "Davis" ledge, in different lots, worked from $240 to $362 per ton. "Anrora" worked three tons, paying $224 per ton. "High Bridge" worked fonr tons, paying $387.50 per ton.

Numerons lots from divers mines have been worked at Anstin, Hot Creek and Belmont within the last three years, ranging from $100 to $1,700 to the ton. There are 300 locations in the district, and there are probably fifty first class.

In a district where all are yet snbsisting on expectetions, it is a delicate matter to specify particular mines and their owners, in the midst of so many apparently rich, yet nndeveloped cleims. Each helieves he hes got his everlasting fortune in aheyance.

From statistics collected from Austin, Belmont and Hot Creek mills, and from the resident miners, and from the general appearance of the lodes of all sizes, one is impressed with the belief that the three Reveille Monntains ere almost febulously rich in mineral wealth.

The present holders who are too poor to develop, must let capital in on reesonable terms. The day bas gone by for prospectors to make a fortune by the sale of en undeveloped lode. From my intercourse with the holders of mines, I have no doubt but thet they will meke liberal arrangements with moneyed men, who may desire to enter the field. There is apparently no place on the continent where capital csn more safely make a moderate venture than in Reveille. A few thousand dollars judiciously and energetically expended on some one of the many largs well defined ledges, would soon determine the question as to the wealth and permanent future of Reveille.

The "Buckeye" mill of Messrs. Lambert, Meson & Co., is now on the road, end will he ready for the redncton of ores in a few weeks. It may be hoped that it will give an impetus to en opening of the mines and aid to demonstrate the necessity for the construction of a railroad from Elko to the Colorado. I repeat that holders hed better give away one-half of their mines to capitalists for development, or sell at low figures rather than to stay in camp living like bedgers and weiting for companies to pay a *great price*, and take *all the hazard of development beside.*

Milk Spring, Empire, Rattlesnake and Hot Creek districts are situated adjacent to and northweet of Reveille, and have the same general formation and much mineral wealth, all inviting capital and enterprise. Although I pessed through these districts I heve not time to speak of the several minee in detail; but all look hopeful for thefuture. Las Minas.

Familiar Science.

Retention of Water in Vegetables and Fruit.

As natnre places water in large quantities in vegetahles and fruits, she also tekes dne preceutions to keep it there. If we take from the earth nnripe potatoes or remove nnripe apples, pears, etc., from the stem; hoth wither, shrivel and become nnsightly to the eye, and vapid to the taste. These effects result from the porons condition of the nnripe skin, which permits the water to escape by evaporation. But if we allow the potato or fruit to remain until natnre has completed her work, no such result ensnes, beceuse, in the meantime, the porons covering of the skin has heen changed to a very thin, bnt impervions coeting, approaching in character to the nature of *cork*, and throngh which no appreciable qnentity of moisture can psss hy evaporation. The vegetahle or fruit is thus provided with a covering which enehlss it to "keep" throngh the winter. The keeping qnality of vegetehles and fruit depends mainly upon the degree of impermeehility of this outside covering. Atmospheric air, or rather the oxygen of the air, is the great corrosive or destructive agent which causes decomposition and decay of vegetahle tissus. If the covering of the fruit or vegetable allows its juices to escepe, the air will enter to take their place, and thus commence its work of destruction.

While the fruit continues in a healthy stete upon the twig, it is constantly passing off large quantities of water, which is taken np hy the roots of the tree, properly eliminated in the leaves, and a portion of the prepared fluid passed thence to the fruit, whence the nseless watery perticles escape to the etmosphere, leaving in the frnit only tbat which is needed to make up its bnlk. Hence the necessity for a porous skin while the fruit is maturing, end an impervious covering to protect it when taken from the tree.

Evaporation of Water from Vegetation.

Few are aware of the enormous quentities of water which are teken np through the roots into the orgenism of vegetebles, and pessed off thence into the atmosphere. An ordinary sun-flower is said to evsporete oneand a querter pints a dey, and a cabbage about the seme quentity. A single wheat plant is said to exhele about 1¼ ounces of water each 24 hours; at which rate en acre of wheat will draw end pess about ten tons of weter eech day! Some idea may he formed, from these statements, of the necessity for a plentifnl snpply of water to the roots of plants, to ensure a vigorons growth.

The sep of plents is the medinm throngh which the fluid is conveyed. It is also the medium through which the minerel constitnents are taken up from the soil and fertilizers employed, end distrihnted to the various tissues of theplsnt. This sep, in its progress from the roots to the leaves, end beck agein for its new supply of water and minerels, constitntes a delicate pnlp, in which the watery particles flow along with almost the rapidity of a stream of water over the earth. By the action of this sap, and the modifying and chemical infinences of the snn and air, varions properties may he communicated to the growing plant. These properties may be also more or less modified by the skill of man, as showu in our article in another column, on the "Artificiel Coloring of Plants." In that erticle we neglected to mention the fact timher, as well as flowers, may also be dyed various colors. A most notable instance of this is the black hamboo, of China. The Chinese possess the secret of coloring this plant a jet black. It is thus cultivated, however, only in the gerdens of the wealthy, and for ornamental purposee.

The strong food we eat creates a desire for muscular exertion.

Wasting Fuel.—The blue fleme observed et the chimney tops of our fonndries and other furnace stacks, is cansed hy the combustion of escaping gases, which will bnrn only when mixed with air, which is conveyed to them after they leave the mein hody of the furnace fire. These flames do not extend down the chimney, but commence and hurn only where they are sesn—in the open eir. Only a small part of the escsping gas is hurnt at ell; hut passes away through the fleme from the lack of the necessary degree of heat to light it. Such flames, as well as the thick volumes of smoke which often accompeny them, indicate a very greet waste of fnel—nearly all of which might be utilized hy a proper construction of the furnace. From ten to fifteen per cent., or more, of all the fuel employed on this coest for making steam is thus wasted, from the lack of either a little forethought or knowledge in the constrnction of furnaces and their flues.

Why csn we not count the posts on a fence when we ere riding rspidly along on a reil car? Because the light from the posts falls upon the eye in such rapid succession that time is not given ths one to produce a perception of its presence before its image is effaced hy the presence of another. Just es the string of a how vihretes after it hes been struck, so the vihretion of the retina continnes, and prodnces a perception of the presence of en object efter the presence of the ohject hes been withdrawn. The rapid presentation of objects so confuses or intermingles the vibrations that we lose their individuality.

Grubs in the Nose.—The snpposed "little gruhs or moths" which are eometimes pressed out of the nose, are simply little bodies of oil thet have been secreted hy the oil sacks which contain them, and, being retained in these secks hy their mouths heving heen kept closed by little specks of dirt or otherwise, have become hardened, and, when sqneezed ont, appeer like little white grubs. The remedy consists in keeping the skin in a healthy condition end the mouths of ths oil secs free from obstruction.

The Soil.—To the mejority of men the soil is nothing but dirt; but to the chemist who knows its origin, its nature and ite capabilities, it is a wonderful mixture of those beautiful elements which in their ever-verying forms become the ambient air, the liquid ocean, the precious opal, the amethyst, and the still more precious diamond; or delicete blue-bell and violet, the amerenth, the lily, and the rose-hud; the spear of blue grass and the cedar of Lehanon; or again, the ruby lip, ths love-lit eye, the noble pelpitating heart, end more wonderful brain. These are the jewels of which the soil is composed and out of which the hushandmen strives to force the food hunger craves. Henceforth as he turns the furrows of the field, let the sleep of his thoughts bs broken by the reflection that the earth thus turned np by the plowshere is donhtless composed in part of the ashes of encestral heroes, whose deeds are the history of the past, and whose mortal remains are the plastic materiel out of which we ars building the bodies of men to-day.

Inequalities of the Ocean Level.—A work lately puhlished at Camhridge, England, on the figure of the earth, gives, as a well established fact, that the water of the sea at the mouths of the Indus is elevated as much as 650 feet ahove that et Cape Comorin, the southern extremity of Hindostan. The author, Rev. George Pratt, Archdeacon of Celcutta, ascribes this difference of hight to the attrective influence of the Himelaya Mountains.

Yellow envelope paper, after being lighted and the fleme hlown out, will continne to burn until entirely consumed. White papers do not possess this property. Chemists allege that it is the coloring matter which renders this kind of paper more combustible than other qualities.

Remedy for Cold Feet.—Cotton socke next the skin, and woolen socks outside of them, are represented as a eure preventive of cold feet. At night the cotton socke will be quito dry and the ontside ones demp.

Mechanical Progress.

A New Form of Steel-Capped Rails.

J. L. Booth of Rochester, N. Y., some two years ago invented a method of giving iron rails a half-inch steel cap, which experienced railroad men think meets the requirements. The *Tribune* of June 3d says: "The rail consists of an iron base with a steel cap, united to the base not by bolts, screws, rivets or welding, but simply by clamping. The iron bar is rolled of the required form and weight, after which it is passed through the compressing machine, which clenches powerfully upon it the heavy steel cap. The subsequent action of weight upon it, as the passage over it of heavy trains, is to grip the iron more and more firmly, until the base and the cap become as firmly united as if they were a single piece of metal. Over the experimental rails laid down two years ago near the depot in Buffalo have passed 40,000 engines and 500,000 cars. The iron rails adjoining opposite them have, in the interval, been six times renewed. No change is as yet observable in the steel-capped rails, and to all appearance they bid fair to wear ont twenty successive sets of the ordinary sort.

Two of the rails were also laid on the N. Y. C. R. R., at Rochester, N. Y., June 7, 1867. On one, the cap was loose and even rattling; on the other, it was firm. They were laid continuously, and with the old style of chairs. They were placed where seventy engines and trains daily passed over them on the main line, and where the track was used constantly for switching and making up of trains. The rate of speed over them varies. The through freight trains are frequently joined at this point, three or four in one, to ascend an up grade. They pass over these rails often at the rate of twenty-five or thirty miles an hour. The loose-cap rail became tight in a very short time, and both are now in perfect order. Four sets of iron rails have been completely worn out, and new sets replaced, on the opposite side of the track, during the period of time these duplex rails have been down."

The effect of use upon this rail seems to be noticeably unlike that upon the rail with a *welded* steel cap. It will be remembered that with that, the rail and cap soon separated.

The *Iron Age* of June 17th notices this invention at considerable length, pronounces it undoubtedly a success, and says "there is reason to believe that it will be extensively adopted." It says also: "The force which holds the cap firmly upon its base is the process known by mechanics as "peaning," and may be illustrated by laying a straight bar of iron upon a curved surface, which will, by a successive application of light blows upon the upper surface, be thrown into a curved form. This is a well-known effect, and we venture to say, there is no force of power employed in, or applicable to, the springing of an iron bar more effective. It is this "peaning" process that splits down the sides of the T rails, and not the weight of machinery."

Artificial Stone—Oxalate of Lime.—At a recent meeting of the Polytechnic Association of the American Institute, Thomas Hodgson described two methods of preparing artificial stone, and exhibited specimens. One of these is prepared by treating lime with a solution of four ounces of oxalic acid in a gallon of water, thus producing an oxalate of lime, which is mixed with from two to four times its weight of sand. In this condition the material is a moist, friable powder. It is then molded to the required form in plaster of paris molds, removed from the latter, and suffered to dry. It is then preferably placed in a bath of dilute oxalic acid, which causes it to harden throughout, after which it is ready for use. In making the other variety, the inventor treats the oxalate of lime with a solution of silicate of potash, thus bringing it to a semi-fluid condition, whereupon it is poured into molds and suffered to indurate. The cost would be about ten or fifteen per cent. greater than that of common plaster casts.

In remarking upon this, Dr. Van der Weyde said that the idea was a lucky thought; for oxalate of lime is one of the most insoluble substances known.

Boiler Flues.—The transverse section of a flue should be a circle. Nevertheless, the longitudinal joints are generally lapped. Such a departure from the true circle, considerably lessens the power of resistance. The loss of strength has been ascertained to be nearly one-third. The joint should be a *butt* joint, with longitudinal covering plates. Mr. Henderson says the cylindrical form is the only one to be relied on in any construction where tubes have to sustain an external pressure.

New Steam Pump.—The London *Mining Journal* describes a pump lately brought forward, as of remarkable simplicity: "There are only two moving parts in the engine—a piston, with a cylindrical slide-valve within it, actuated directly by the steam, by the main piston passing over certain ports or openings in the steam cylinder, the valve moving in the opposite direction to that of the piston. The engine (with its steam piston and slide-valve, self-contained within the cylinder) is bolted upon the cover of the pump-barrel. The only moving part visible is about a couple of inches of piston-rod, which, of course, could be eased in if required. Were it not for seeing the piston-rod gliding backwards and forwards through the stuffing-boxes, no one would suppose the machine to be at work, its action is so noiseless. The engine has neither fly-wheel, crank-shaft, bearings, eccentrics, connecting-rod, pins, joints, tappets, springs, nor small valves to regulate the action of the steam. It can be worked at an extremely slow rate of speed, below ten strokes per minute, by simply regulating the admission of steam to the cylinder."

Tungsten Steel.—M. Leguen, who has been experimenting at intervals for two or three years, has lately, by the use of good white cast iron in place of the gray pig before used, produced tungsten steel of excellent quality. A portion of the iron is first alloyed with one-tenth wolfram, in a cupola furnace, and is added to the rest in the convertor. The conversion is carried further than usual, so that the carbon is reduced to one-half the ordinary proportion. The steel so produced is soft, but very tough, and tempers remarkably well. M. Leguen mentions that it will be found extremely useful for machines, some parts of which require to be tempered, while others are kept soft. The objection brought against this alloy is that it is expensive, but the amount of tungsten employed by M. Leguen is so small—only 0.55 per cent.—that it can make but a very small addition to the cost of the steel.—*Mechanics' Magazine.*

Area of Safety Valves.—The size of the orifice in safety valves may be determined by the following rule: Let the required area of the valve equal, in square inches, from 1-25th to 1-30th of the number of pounds of coal burned per hour. This rule is applicable to boilers in which the weight of water actually evaporated per pound of coal is about six pounds; consequently we may state it thus: the said area in square inches equals from 1-150th to 1-180th of the water actually evaporated per hour.—*Am. Artisan.*

Water-room and Steam-room.—According to Bourne, of the whole boiler-room, or internal capacity of the boiler, there are very nearly ⅓ water-room, and ⅔ steam-room; according to Robert Armstrong, there are ⅓ water-room and ⅔ steam-room; and that author considers that with a less proportion of steam-room, there is risk of priming, or carrying over liquid water from the boiler to the cylinder.—*Artisan.*

Scale in Boilers.—If the water contains bicarbonate of lime, this is decomposed by the heat and the carbonate is precipitated. Sal-ammoniac is recommended for preventing the precipitation of lime by forming soluble chloride of calcium. This is used in Holland for locomotives. Carbonate of soda is recommended as an effectual means of preventing scale from water containing either carbonate or sulphate of lime.

Nominal Horse-power of Boilers.—The following is a rule, founded on the best practice: Take a mean proportional between the area of fire-grate in square feet and the area of effective heating surface in square yards. The nominal horse-power of the boiler is generally much less than the indicated horse-power of the engine, to which it bears no fixed proportion.—*Am. Artisan.*

Scientific Progress.

Source of Light in Flame.

As proof that light in gas and candle flame is not due to incandescent particles of carbon, but to radiation from dense but transparent hydro-carbon vapors, Prof. Frankland showed that mixtures of hydrogen and carbonic oxide with oxygen emit but little light when they are burnt or exploded in free air, but exhibit intense luminosity when exploded in closed glass vessels, so as to prevent their expansion at the moment of combustion.

Again:—The denser the gas through which the electric spark is passed, the greater the amount of light emitted. The intensity of the light is very great in chlorine and sulphurous anhydride, and very slight in hydrogen. On passing a stream of induction sparks through the gas standing over liquefied sulphurous anhydride in a strong tube, at the ordinary temperature, when a pressure of about three atmospheres was exerted by the gas, a very brilliant light was obtained. A stream of induction sparks was passed through air confined in a glass tube connected with a condensing syringe, and the pressure of the air being then augmented to two or three atmospheres, a very marked increase in the luminosity of the sparks was observed, whilst on allowing the condensed air to escape, the same phenomena were observed in the reverse order.

Prof. F. closes his argument thus:—"The *necessity* of solid particles has been disproved. A closer examination into the evidence of their *existence* farther confirms our position. Soot from a gas-flame is not elementary carbon, it always contains hydrogen. The transparency of the luminous portion of flame tends to negative the idea of solid particles. The continuous spectrum of gas and candle-flames does not require the assumption of solid particles. The spectra of the flames of carbonic oxide in air, of carbonic disulphide, arsenic, and phosphorus in oxygen, are continuous, and so, as we have seen, is that of hydrogen burning in oxygen under a pressure of ten atmospheres. It is to the behavior of hydro-carbons under the influence of heat that we must look for the source of luminosity in a gas flame. These gradually lose hydrogen, whilst their carbon atoms coalesce to form compounds of greater complexity, and, consequently, of greater vapor density."

Dr. Winslow's New System.—C. F. Winslow, M. D., has published a book entitled "Force and Nature," which is said to be likely to attract a good deal of attention among speculative scientists. We have not yet seen it, and defer special mention to a future issue. Meanwhile we may mention that it takes the ground that *repulsion* "is just as much a force as attraction; cognate in origin, equal in value, quantity and extent with that of gravitation, and going hand in hand inseparably with it into atoms and into masses," and throughout infinite expansions into the dynamics of celestial motion; and playing an equal part also with attraction as a primary agent in the production of all physical, organic, and vital phenomena."

Liquefaction of Gases by Pressure.—This was exhibited by Mr. Ladd at the Royal Institution in the following manner: Three glass tubes, open at the bottom, containing cyanogen, sulphurous acid, and ammonia in their upper parts, and filled with mercury below, are inclosed in a strong glass cylinder filled with water. At the top of the cylinder is a small force-pump, which, when worked, drives more water into the cylinder, and forces the mercury, which acts as a piston, up the tubes. As the mercury rises the gases are condensed, and now appear as liquids at the top. When the pressure is reduced by opening a stop-cock the liquids boil, and the gases speedily resume their normal dimensions.

Ancient Human Remains in Pennsylvania and New York.

In the last issue of the Proceedings of the Natural History Society, W. H. Niles thus describes certain traces of an ancient race found in the Pennsylvania oil region: "Artificial excavations or oblong pits are to be found in considerable numbers in sections of the Oil Creek valley. Sometimes the sections thus marked embrace hundreds of acres in extent. The pits are from four by six to six by eight feet in size, and although much filled by natural accumulations, are frequently from four to six feet in depth. Some of the larger ones were curbed with timbers. The bark was removed, and it is stated that sometimes the timbers were halved and rudely adjusted at the corners. In one instance, while excavating preparatory to the construction of a sawmill, some workmen came upon one of these pits where the timbers were twelve feet in length, and placed perpendicularly upon end. It is also stated that in some of these wells there have been found logs with notches cut in them, which may have served as steps for the ascent and descent of those who constructed and used them.

Such works are not found beyond the limits of what is known as the oil region, and that they are excavated for the purpose of obtaining petroleum, there scarcely can be a doubt. That petroleum was obtained in evident from the fact that the timbers used are thoroughly impregnated with it, and by it preserved in a good state of soundness, and frequently are almost free from decay."

From the trees growing thereon, and other indications, Mr. Niles concludes that these works must be referred to the time of the ancient copper miners of the Lake Superior region, and of the mound-builders of the West.

The same report gives the conclusions arrived at by Mr. Henry McGuier, who noted the developments made in the cleaning out of the High Rock Spring, in Saratoga County, N. Y., in 1865. The different layers of muck and tufa overlying an ancient fireplace, with charcoal and other marks of the action of fire, must have required for their deposition,—Mr. McG. thinks,—some 5,500 years.

Chemical Action Arrested by Pressure. At a recent meeting of the Polytechnic Association of the American Institute, the above named subject was brought up. Mr. Phin,—after reading the statement, to which we have alluded in a former issue, to the effect that Cailletet has found that acids cease to disengage hydrogen in the presence of zinc, etc., if subjected to strong pressure,—remarked that in his opinion, M. Cailletet had deceived himself in the matter; that he had himself often prepared hydrogen by the action of acid on zinc under pressure of, say, ten atmospheres, and that others had done the same under much greater pressure. He added: "When operating in glass vessels we are apt to deceive ourselves from the fact that the pressure causes the bubbles of gas to diminish in size, and we are apt to suppose that no action is going on; when, in reality, gas is being produced at a very rapid rate."

State Geological Surveys.—The *U. S. Railroad and Mining Register* gives a memorandum of the present condition of the various State Surveys. Of Ohio, Michigan, Indiana, Illinois, Iowa, Missouri, Tennessee, North Carolina, New Hampshire, and New York, progress is noted; but the writer mournfully exclaims, "Alas for Pennsylvania! No cabinet; no survey; no record office; no mining bureau; nothing!"

What shall we say of California?

A New Arum.—Specimens have recently been forwarded to England, of a gigantic Nicaraguan plant, closely allied to the Arums, which has heretofore escaped the notice of traveling botanists. It produces but one leaf, nearly 14 feet in length, supported by a stalk 10 feet long. The stem of the flower is a foot in circumference, the spathe or flower is two feet long, purplish blue in color, with a powerful carrion-like odor.

Farming and Gardening.

Cultivation and Utilization of Oats.

Oats, as well as wheat and other cereals, were undoubtedly derived, originally, from wild grasses, and owe their present perfection solely to care and cultivation. They are much more recent in their introduction than wheat or barley. We find no mention of oats until about the commencement of the Christian Era; although we learn from Scripture that Solomon fed his horses on *barley*. Caligula fed his favorite horse on "gilded oats out of a golden cup," from which circumstance we may reasonably infer that the grain was then very scarce and dear; probably just coming into cultivation.

The advantages derived from the cultivation of oats, arise chiefly from the fact that they are more easily raised in cold and wet climates than any other grain; probably because, as the seeds approach maturity, they assume a pendant position, allowing the sporules of fungi, or the ovules of larvæ to be easily washed off by the rain, or shaken off by the wind. The scattered position of the seeds also allows of a more free access to the ripening and fructifying influence of sunlight and air. Oats when allowed to run wild rapidly deteriorate; or rather more readily fall back into their natural state than either wheat or barley.

The disadvantages attending the cultivation of this grain are due to the fact that the nutritive substance is generally less in a given weight, and to the acre, than in any other cereal, although the gross weight of seed may be larger. Moreover, the composition of oats is more liable to variations than other grains, so that the feeding value is not constant or reliable. Climate, soil, seed, manure, etc., appear to affect the character of oats more than other grains. Some kinds are fully one-third more nutritive than others.

The chemical and nutritive character of all the various grains have been much studied of late years; and from such examination it appears that none but the best quality of oats will bear a favorable comparison with the other grains. The oat, when properly selected and cultivated, is rich in non-nitrogenized substances, such as go to keep up animal heat and form fat, and in that respect it is valuable for fattening animals; but this condition is present in excess, only when the grain is of a superior quality. The proportion of nitrogenized or flesh-forming substances is also greatly dependent on cultivation; and in good oats is larger than in either wheat, barley, corn, rye or buckwheat.

The inference from the above is that oats should never be raised for grain feed, except when the utmost care can be taken in the entire cultivation of the plant. Hence greater advantages may be derived from "drilling in" oats, than other kinds of grain. Among the advantages of drilling we may mention the economizing in the quantity of seed; the giving of the grain more air and sunlight, and the covering of the seed more uniformly in depth. No grain is more dependent on cultivation than the oat.

We have said that oats, when properly cultivated, are superior for their flesh or muscle-forming properties—a very important consideration in working animals. The leaf and stem of this plant also contains a much larger portion of flesh-forming material than the same parts of any of the other cereals. It is to this fact that our California wild oats owe their superiority when used for hay.

Oats are also more improved in their nutritious qualities for animals, by grinding, than other grains; for the reason that they require more mastication. Horses, especially, when put to feed, after working hard, will not take time to masticate their food; hence this work should be partially done by machinery. Careful experiments show a saving of fully one-third from grinding. When grain goes into the stomach in a whole state, it is worse than lost, because not only no nourishment is derived from it; but it also works a positive injury to the system.

The varieties of oats now most commonly cultivated and approved in the Eastern States are the New Brunswick, a valuable white oat (newly introduced), the Surprise, noticed by us last week, the black Swedish, lately introduced through the Agricultural Bureau, and the Excelsior, a new English oat, remarkable for its plumpness and yield. All of these belong to the common oat species. Then we have the Tartarian varieties, such as the Potatoe, the Hungarian, and the Siberian. These are generally considered inferior to those first named. We have also the Naked oats, *Avena nuda*, and the Chinese, two recently introduced varieties, quite similar in character, and which are highly spoken of. In addition to those mentioned there are not less than seventy others, known to botanists.

With regard to the Norway oats to which allusion was made last week, we are in doubt. Our impression is that their popularity is more apparent than real, and is due to the extensive and persistent plan adopted for their advertisement to the public, rather than to their intrinsic merits. The result of some of the experiments made have been quite unsatisfactory, while in some cases excellent reports are returned. Some spurious seed has also no doubt been sold. It is possible that the diverse results may be due to certain peculiarities in this plant, which we will endeavor to notice next week.

Horticulture in Greenland.

In the furtherest northern limits of cultivation, as in Southern Greenland, Iceland, etc., there are barely two months of Summer during which what cultivation is carried on, must be conducted with the greatest care. Naturally, culture in those regions can produce neither fruits, seeds or trees; but vegetables, furnishing leaves only, do passably well. Radishes do well, so do cabbages, which, however, do not form heads, spinnach, salads, etc. The flavor, however, even of such growths, is quite inferior. Potatoes will only grow to the size of hazlenuts. Manure has very little effect upon the growth of vegetation; because the warmth of the sun is not sufficient or does not continue long enough to decompose it. The only way in which ordinary manures can be employed is to expose them to the action of the weather for several years, when they become sufficiently decomposed to be of some service in the garden. To produce even the vegetables named, seeds must be first started in hot houses. The ground, even in the most southern part of Greenland, continues frozen the year round to within a few inches of the surface. The utmost northern limit of trees passes through the southernmost part of Greenland, and on this coast just to the north of Behring's Straits. The thermal lines of Kodiak and our Alaskan peninsula correspond with those of the northern limits of Canada and New Brunswick. Still there is less ice along the coast of our northwestern promontories than on the coast of New England.

Large Tree Near Santa Cruz.—There is a redwood tree near Burk's Eureka mill, Santa Cruz County, that is 26 feet in diameter, 65 feet to the first limb, and is more than 200 feet high. It is a well-proportioned tree, round and not deformed.

A Stuffed Cat placed upon strawberry beds, is said to be an effectual means to drive away the birds. If so, why will not the same device keep the birds from cherry trees. The experiment might be easily tried.

Artificial Coloring of Plants.

Plants derive the whole of their mineral matter from the soil, as well as an important portion of that which is combustible (their carbon). The water which moistens the soil, takes into solution these mineral matters, and from the rootlets, where it is first received, passes it up through the trunk and stem into the leaves, (the lungs of the plant) where it is further elaborated by the action of the sun and air.

This part of the process is a chemical work, and to it is due the color of the plant. There can be no color, but white, without the aid of the sun or some artificial light. Different chemicals may be made to produce, by the aid of the sun, different colors. Charcoal powder darkens and enriches the flowers of the dahlia, the rose, the petunia, etc. Carbonate of soda reddens the hyacinth, and super-phosphate of soda alters in various ways the hues of other plants.

Some few years since, one of the hands employed in the paint factory of Mayor Tieman, at Manhattanville, N. Y., having thrown some liquid green paint of a particular kind on a flower-bed occupied by white anemones, the flowers subsequently made their appearance with petals as green as grass. The paint had in it a peculiar and very penetrating chemical mixture, which Mr. Tiemau has since applied, with other colors, to various plants, annual, biennial, and of the shrub kind—the result being invariably that the flowers so watered took the hue of the liquid deposited at their roots.

The circumstance which originally led to the discovery of this interesting class of facts was due to the experiment of an English horticulturist who once covered with pulverized charcoal the ground around the roots of a rose bush, the flowers of which were of a faded and uninviting hue. He was surprised to see the color of the flowers, as they successively came out, gradually change to a lively rose color. He tried the same upon his petunias, and the white colored flowers become beautifully veined with violet tints; while violets to which he applied the charcoal, become covered with irregular spots of a bluish or almost black tint. It is a singular fact, however, or at least it has been stated as such, that yellow flowers appear to be insensible to the action of charcoal.

It is thus that science and observation has enabled the horticulturist to control, to a greater or less extent, the color and character of the most beautiful productions of nature. As the dyer prepares the chemical ingredients into which he dips his stuffs, to give them the desired color, so the horticulturist may now place about the roots of his favorite plants the peculiar chemical, so prepared and mixed, as to produce the new color which he desires should be imparted to its leaves and petals. Thus it appears that we may yet be able to "paint the lily," which Solomon, in all his glory, considered entirely beyond the power of man. The wonders of science, great and varied as they have already become, are as yet but just beginning to dawn upon us.

Something New for Greens.—The *Alta* says that an English gardener, fond of pumpkins, tried some of the young, just-formed fruit for greens, and found it excellent. He cuts the tender shoots and cooks them with pepper, salt and butter, chops them up fine, and serves like other greens. They are commended to epicures for their brilliant color, delicate aroma and grateful flavor. Our cotemporary suggests that some one should try this new candidate for table honors and report thereon.

Crystalizing Flowers.—This is done by suspending or repeatedly dipping them in water saturated with alum. This, however, can only be done with dried specimens. The freshness and beauty of flowers can be preserved by dipping them in glycerine.

Fire in the Grain Fields.—The Castroville *Argus*, of June 26th, says that on the Thursday previous a destructive fire broke out in the grain field on El Alisal Rancho, about two from miles from Natividad, by which some 300 acres were burned over and 100 sacks of thrashed grain spoiled. The fire originated from sparks that fell from the chimney of a steam thresher.

The editor of the *Argus* expresses the hope that some plan will be found by which the falling of sparks in grain fields may be avoided, so that our farmers may to the fullest extent reap the reward of their faithful toil. We would refer the *Argus* to the notice of Mr. Bowker's "Improved Locomotive Smoke Stack," which will be found under the head of "New Inventions" for the present week.

Deformed Cattle—Interesting Physiological Fact.—The Walla Walla (W.T.) *Statesman* says: The people in the vicinity of Spaulding's, on the Touchet, are having something new in the annals of stock raising. A farmer from that section informs us that fifteen out of twenty of the calves born there this spring have either been so badly deformed that they died at birth, or it was necessary to kill them to put them out of misery. In one instance there was only one perfectly formed calf out of thirteen, and in another only one out of six. The farmers there believe they have discovered the cause of this singular freak of nature in the fact that only cows that range in the vicinity of, and licked at, certain banks, supposed to be impregnated with alum, have deformed calves. The residents there are preparing to fence these banks, or licks, and thus in future avoid the misfortune that has befallen them this season.

Who Owns the Fruit of Overhanging Limbs.—Judicial decisions have established the principle that if a tree growing upon the ground of one party overhangs that of another, the party owning the tree can enter upon the ground of his neighbor and gather his fruit, provided he does no damage beyond that necessary for such an act. On the other hand, the neighbor has the right to cut off all the limbs that overhang his land, and remove all roots that permeate his soil; but although he may permit them to grow, he has no right to enjoy the benefit of their fruit.

Four O'clocks.—Mr. Williams, of the firm of Williams & Ede, of this city, sends us word that he has planted some Eastern seeds of this flowering plant, and finds to his surprise that in California soil it forms bulbous roots, and becomes perennial. Some members of this family in the tropics often become shrubs or trees; but we were not aware that they ever formed bulbous roots.

Bovine Hybrid.—W. H. Kelly, a Big River merchant, has a cow that has given birth to an elk calf. He obtained the cow from a hunter in that vicinity. Several persons have seen the funny stranger, and report it elkish in manner but calfish in taste.

Wheat and Phosphorus.—When a wheat crop of 25 bushels is harvested from an acre, there are removed 20 pounds of phosphoric acid and 30 pounds of potash. If these are not restored by some form of manure, the field will not continue to produce 25 bushels to the acre.

The Saving of Machinery.—It is said that the threshing machines used in the United States save 10,000,000 bushels of grain annually more than the flail would save.

Scarcity of Harvest Hands.—It is said that there is a scarcity of harvest hands in some localities. In the vicinity of "Hayward's" farmers have been forced, against their wishes, to employ Chinamen, as without them, they would lose their crops.

Sitka cranberries have made their appearance in this market—100 barrels having arrived last week. The fruit is very fine, much better than the Oregon berry. It is said that any quantity can be obtained from Kodiac.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, July 3, 1869.

Financial.

Although our local money market remains stringent, there are strong indications of an early release from the pressure. In the Savings and Loan institutions the deposits exceed the withdrawals, indicating a less active demand for cash, and a wholesome thrift. However severe may have been the ordeal from which we are just emerging, it has been literally nothing compared to that suffered by New York when as high as 50 per cent. per annum was paid for money, nor are their difficulties yet surmounted. Treasure shipments to a large extent are now made by railroad instead of steamer to New York, the rate being 1¼ per cent., insurance included.

The real estate transactions for the past six months of 1869 have been largely in excess of those for the year preceding. *Carter's Real Estate Circular* has the following figures for the first six months of the past four years: Number of sales so far for the current year, 4,615; value, $21,001,674. Number same time last year, 3,477; value, $13,830,436. Number in 1867, 2,895; value, $8,985,019. Number in 1866, 2,590; value, $7,634,759. While the value of the sales for 1867 only increased $1,350,260, the increase of 1869 over 1868 amounts to $7,171,238. The mortgages for June numbered 293, valued at $1,305,942, and the releases were 139, valued at $419,795.

The Exports of Treasure from June 1st to date, have been as follows:

Total since June 1st, 1869	$3,654,224 02
Previously this year	15,950 193 98
Overland since May 8—to New York	1,421,811 95
Total since January 1st, 1869	$21,046,229 95
Corresponding period, 1868	19,937,491 65
Increase this year	$1,108,738 30

City Stocks.

During the past week the open market for miscellaneous shares has not been active. We note sales of Spring Valley Water stock at $64 50 per share. Of San Francisco Gas stock, 130 shares realized $80 25 per share. The usual monthly dividend of this Company is payable since the 1st inst.——The July dividend of the Pacific Bank is announced.——The stockholders of the San Francisco Insurance Company will receive a portion of the assets of said Company, on and after the 1st inst.—— The July dividend of the North Beach and Mission Railroad is now payable.——The Merchants' Mutual Marine Insurance Company, and the Spring Valley Water Company, disburse their usual dividends on the 10th.

Mining Share Market.

The mining share market has been tolerably active during the period under review, and the stock list of the Board participated quite generally. Prices have been well maintained, though we do not note any very material advance or decline. Larger sales than usual have been made of White Pine stocks, a dozen companies comprising the sale list.

The Board adjourned from Friday afternoon, July 2d, to Wednesday morning, July 7th—allowing all a general holiday.

IMPERIAL—is in light request. From the annual report for the fiscal year ending May 31, 1869, we make the following extracts. With regard to the operations in the Imperial-Empire shaft, the Superintendent says:

In August last, sinking was resumed in the Imperial-Empire shaft, and in January of the present year the shaft had attained a depth of 1,100 feet, since which time stations have been opened on the 1,000 and 1,100 levels. On the 1,000 level a drift was run to the vein, e distance of 90 feet, where the vein was found to contain only barren quartz. This drift has been continued west into the vein 75 feet, without any better result; also, a side drift hae been run north 60 feet, from which point a cross-cut has been run east 60 feet to the clay-wall—which cross-cut did uot develop anything but barren quartz. On the 1,100 level, we fonnd the east wall at a distance of 15 feet from the shaft. A drift on this level has been run 150 feet west into the vein, which contains only porphyry. On this level we are running a drift south to the Holmes mine, a distance of 248 feet from this shaft. This drift le now 76 feet south of shaft. The summary of work done in this mine for the year past, has been the sinking of 225 feet of shaft, and the running of 760 lineal feet of drifts.

From the Secretary's report we take the following recapitulation of the receipts aud disbursements from May 31, 1866, to May 31, 1869:

RECEIPTS.

For Alta mine		$993,032 52
" Holmes mine	25,775 07	
" Rock Point mill	10,101 94	
" Gold Hill mill	3,183 58	
" Premium	5,583 51	
" Discount	159 91	
" Lindauer mill	963 95	
" General expense	424 50	
" Imperial-Empire shaft	1,511 72	
" Assessment No. 2	100,000 00	
		$740,634 70
For book accounts, per report May 31, 1868	$ 235 06	
" Office fixtures	1,174 56	
" Cash on hand May 31, 1868	32,962 51	
		34,392 13
		$775,026 83

DISBURSEMENTS.

For Rock Point dam and mill repairs	$ 11,448 84	
" General expense	21,478 03	
" Rock Point mill	286,290 03	
" Gold Hill mill	99,872 16	
" Expenses in San Francisco	9,021 77	
" Imperial new drifts	20,162 84	
" Alta mine	211,706 01	
" Holmes mine	5,101 98	
" Legal expense	4,720 76	
" Discount	3,760 56	
" Assaying	1,471 13	
" Treasure freight	1,793 29	
" Dividend	24,000 00	
" Interest	1,018 37	
" Imperiel-Empire shaft	78,220 78	
		$763,166 55
Assets—		
Book accounts	$3,005 56	
Office fixtures	1,174 56	
Cash on hand May 31, 1869	7,680 16	
		11,860 28
		$775,026 83

From the Alta mine 42,958 tons of ore were reduced, aggregating $576,371 or an average of $13 37 per ton; and from the Holmes mine 2,214 tons, amounting to $26,775, equal to $11 64 per ton. The cost of reducing 12,333 tons of ore at the Gold Hill mill amounted to $7 84 per ton, and 32,839 tons at the Rock Point mill, $7 60⅔ per ton. The expenses of hauling ore from the mine are included in the above. The cost of extracting 40,975 tons, including drifting, repairs, etc., amounted to $4 78⅓ per tou.

The following is a statement ebowing the disbursements and receipts of the Company, from the date of its going into operation to May 31, 1869:

DISBURSEMENTS.

For expenditures for milling and mining purposes, including new machinery and improvements		$3,813,773 27
General expense account, for sundries and legal expenses		288,031 11
Assaying		37,558 72
Expenses in San Francisco		59,097 51
Interest		19,237 73
Premium and discount		29,017 81
Treasure freight		30,230 67
Federal tax, paid to Assayer		18,396 93
Dividends		1,067,500 00
Assets—		
Book accounts	$3,005 56	
Office fixtures	1,174 57	
Cash on hand	7,680 16	
		11,860 28
		$5,365,704 03

RECEIPTS.

Mines and Mills—		
Receipts from ores and sundries sold for account of mines and mills		$5,119,374 72
Interest and rents		2,768 79
By proceeds from outside ores		48,828 60
San Francisco office		800 00
General expense		1,309 73
Property sold		1,343 75
Premium and discount		33,829 47
Federal tax, returned by Assayer		406 26
Gold Hill Draining Company		2,284 43
Assessments		150,000 00
Imperial engine shaft		5,058 28
		$5,365,704 03

The available assets of the Company, in supplies, consist of timber, lagging, wood, castings, quicksilver, chemicals, etc., and for account as follows:

Gold Hill mill	$3,398 80
Alta mine	1,584 88
Rock Point mill	5,904 04
Imperial-Empire shaft	1,724 81
	$12,612 53

The only outstanding liability of this Company is $27,000, being balance of subscrtption ($30,000) to Virginia and Truckee Railroad, payable in equal monthly installments of $3,000.

The officers for the ensuing year are as follows: A. K. P. Harmon, (President) Thomas Bell, (Vice-President) Thomas Sunderland, A. Hayward, James Freeborn, Robert Sherwood and Joseph Barron. D. A. Jennings was appointed Secretary.

HALE & NORCROSS—exhibited aheut the usual activity, showing better prices at the close. On the 29th of June, $25,686 in hullion eamo to hand. During the week ending June 29th, the upper mine yielded 121⅔, and the lower mine yielded 1,269 tons of ore, 709⅓ tons coming from the fifth station level. In the same time, 1,166⅔ tons were delivered for reduction, leaving 1,505 tons on hand.

CHOLLAR-POTOSI—is in better request, at improved rates. The week ending June 25th shows an ore yield of 1,830 tons, from the following localities: Blue Wing, 830; New Tuunel, 810, and Croppings, 190 tons. The general condition of this mine is very good. On the 21st ult. they connected the 1,100 station with the Hale & Norcross 1,030 level, giving a fine draught of air for working purposes. At the 500 station the face of the drift is in clay and porphyry, with a gradual increase of water. On June 30th, $18,116 in hullion came to hand.

GOULD & CURRY—obtained slightly improved prices over last week's sales. On the 29th of June, $14,329 in hullion was received at the office in this city, and for the month of June the aggregate product foots up $46,295 69. During the week ending June 28th, 325 tons of ore were extracted, the everage assays of car samples showing $63 10 to the ton. Tho shaft has been completed, and work commenced in opening the seventh level.——OPHIR, under moderate sales, shows a decline. The drift, on the 29th ult., was 397 feet in length.——Notbing new from the IMPERIAL; sales light. The office is removed to 419 California street.

Of prominent White Pine stocks dealt in hy the Board, the *News* of the 26th ult. bae the following:

AURORA CONSOLIDATED—is looking remarkably well throughont. The south shaft is 55 feet deep, and in a large body of high-grado ore. At a depth of 30 feet a hreest is being pushed south in good ore. This is below the north hreest from the samo shaft, which has been penetrated 20 feet. The drift northerly from the Iceberg shaft still progresses, and is now in 90 feet. The shipmente of ore continue at ebout 20 tons dally, hut the 250-ton pile of ore on the dump still increases in size. The drift from the Iceberg to Last Chance shaft has heeu enlarged, and as soon as milling facilities can he had equal to the yield of the mine, cross-cutting will he commenced from this drift to the southeest, and the ore taken to hoth shafts for hoisting.

HIDDEN TREASURE (Original) has sent to mill about 118 tons of ore during the week, or ahout 17 tons per day, and is taking out 60 tons per day of good milling ore. The tunnel is in 98 feet; 150 feet (or 52 feet more) will strike the ledge at a depth of 200 feet from the surface near the south end of the claim. The west wall has been reached by the cut, and the entire ledge is beiug breasted to the southeast. Work is being prosecuted along the ledge from one end of the claim to the other, and au ore breast has been commeneed 150 feet north of the south line, to which point it will he pushed.

NOONDAY—has a drift south 200 feet, with a cross-cut 100 feet in, running 40 feet east and 15 feet west. Twenty feet in the main drift a winze has been sunk 62 feet, from the hottom of which a drift has heen run 20 feet through quertz. The north shaft is down 30, with a south drift of 18 feet. Ahout 36 tone of good ore on the dump.

VIRGINIA.—The mein shaft is down 30 feet, and 8 more will connect it with the tunnel. The hottom of the shaft ie in very rieh ore. All tho work about the mine is progressing favorably. Ten tons of ore were seut to the Centenary mill on Thureday last, and more ie heing assorted. On Saturday last an assessment of $1 25 per share was levied on the capital stock, which will become delinquent July 26th.

COALS TO NEWCASTLE.—The Santa Barbara *Post* says that not less than three million feet of lumber have been imported into Santa Barbara county within the two years past; and this while immense forests of the finest timber in the State may be found in the Santa Ynes Mountains, which run through the central portion of the county, within eighteen miles of the town of Santa Barbara, where the lumber is landed for the northern coast. Where are our saw-mill men? The *Post* says there is a fine opening for somebody in that line.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every Issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alpha Cons, Storey co., Nev., June 5, $5	July 10	July 31
Rhne Rose, White Pine, May 31, 5c	July 10	August 1
Rullins, Storey co., Nev., May 22, $10	Payable immediately	
Rodt, White Pine, June 23, 25c	July 24	Aug 14
Central, Storey co, Nev., June 23, $2 50	July 24	Aug 14
Cosala, Mexico, June 19, $1.25	July 24	Aug. 12
Cons Chloride Flat, W. P., May 25, $1	July 7	July 29
Cherokee Flat, Butte co., $5	Aug. 3	Aug. 18
Cuba Cons., White Pine, June 24, 5c	July 24	Aug. 10
Cayuga Chief, White Pine, June 24, 10c	July 30	Aug. 10
Daisey, Lyon co., Nev., May 29, $1 50	July 1	July 19
Daniel Webster, White Pine, June 30, 15c	July 30	Aug. 15*
Eclair, White Pine, May 22, 10c	July 17	July 31
Edith, White Pine, May 12, 10c	June 17	July 7
Evening Star, White Pine, June 25, 10c	July 31	Aug. 21*
Gold Hill Q., Storey co., June 29, $1	Aug. 2	Aug. 23
Hidden Treasure, White Pine, June 29, 50c	Aug. 4	Aug. 25
Hope Gravel, Nevada co., May 17, $1	June 21	July 19
IXL, Alpine co., May 10, $1 50	June 26	July 14*
Julia, Storey co., Nev., May 27, 50	June 29	July 17
Kentuck, Storey co., Nev., June 14, $10	July 15	Aug. 3
Lexington, White Pine, May 25, 10c	June 23	Sept 4
Mazeppa, White Pine, June 30, 10c	Aug. 5	Sept. 11
Morning Star, Alpine co., May 11	June 21	July 12
Maxwell, Amadorco, May 15, $1	June 15	July 15
Mammoth, White Pine, May 20, 25c	June 30	July 30
Mocena, White Pine, June 24, 10c	July 29	Sept. 4
Mahogany, White Pine, June 17, 10c	July 23	Aug. 18
Metropolitan, white Pine, May 26, $1.50	July 1	July 16
Noonday, White Pine, June 14, 30c	July 19	Aug. 9
North Star, Nevada co., June 5, $5	July 9	July 30
North Star, White Pine, May 12, 7½c	June 18	July 17
North Bloomfield, Nev. co, May 18, $1 50	June 19	July 5
Overman, Storey co., Nev., May 15, $20	June 18	July 3
Ophir, Storey co, Nev., May 18, $3	June 21	July 6
Pactolus, White Pine, April 6, 15c	June 30	July 30
Pocotillo, White Pine, May 17, $1	June 24	July 15
Rainbow, White Pine, June 22, $1	July 27	Aug. 14
San Jacinto, Tin, May 27, 50c	June 28	July 13
Silver Moon, White Pine, May 31, 5c	July 10	Aug. 10
Silver Wave, White Pine, June 7, 20c	July 8	July 28*
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug. 28
Virginia, White Pine, June 17, $1.25	July 26	Aug. 11
White Pine Water, June 23, $10	July 28	Aug. 18
Willimantic, White Pine, May 20, 25c	July 19	Aug. 10*

MEETINGS TO BE HELD.

Albemarle, White Pine	Annual Meeting July 5
Chollar-Potosi, Storey co., Nev.	Annual Meeting July 12
Chester, White Pine	Annual Meeting July 30
Kewanee	Annual Meeting July 10*
Miser's Dream, White Pine	Annual Meeting July 6
Overman, Storey co., Nev.	Annual Meeting July 7
Pocahontas	Annual Meeting July 6
San Fernando Tunnel, White Pine	Annual Meeting Aug. 2*
Savage, Storey co., Nev.	Annual Meeting July 15
Sedgely, White Pine	Annual Meeting Aug. 4
Sierra Nevada, Storey co., Nev.	Annual Meeting July 6
White Cloud, White Pine	Annual Meeting Aug. 2*

LAST DIVIDENO.

Alpha Cons, Storey co., Nev, div. $2	Pay. June 19, 1868
Amador Co., div. $10 per share	Payable May 5, 1869
Bacon, Storey co., Nev., div	Payable June 19, 1868
Chollar-Potosi, div., $3	Payable June 3, 1869
Coney, preferred Stock, div. 1½ per cent.	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12 1868
Empire N. & M., Nev., dividend $6	Payable May 15, 1867
Eureka, div. $7.50	Payable June 16, 1869
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Gelden Charlot, Idahe, div. $3	Payable June 15, 1869
Golden Rule, Tuolumne co, div. 50c ₱ sh.	Pay. June 26, 1869
Hale & Norcross, div. $5	Payable May 10, 1869
Imperial, Storey co., Nev., div	Payable June 20, 1868
Industry, White Pine, div., $4	Payable July 1, 1869
Keystone, Sierra co, div., $32	Payable May 6, 1869
Kentuck, div., $20 per share	Payable Jan. 10, 1869
North Star, dividend, Nev.	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Unassessable, div	Payable June 18, 1868
Sand Spring Salt, dividend $1	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec 19, 1868
Savage, Virginia, Nev, dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. $2.50	Pay. June 10, 1869
Virginia & G. H Water Co.	Dividend, payable April 15, 1869
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, July 2, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked.
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	86	87¼
Legal Tender Notes	74½	74¾
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par	& int.
San Francisco City Bonds, 10s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par	& int.
San Francisco City and Co. Bonds, 7s, 1866	88	90
San Francisco City and Co. Bonds, 7s, 1862	88	90
San Francisco City and Co. Bonds, 7s, 1864	88	90
San Francisco City and Co. Bonds, 7s, 1865	88	90
San Francisco City and Co. Judg. Bds, 7s, 1863	88	90
San Francisco City and Co. Judg. Bds, 7s, 1864	88	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	—	60
Spring Valley Water Co	84¼	64½
State Telegraph Co	25	—
GAS COMPANIES.		
San Francisco Gas Co	79¾	80
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
San Francisco and San Jose Railroad	—	—
Omnibus Railroad	—	72½
Central Railroad	50	—
North Beach and Mission Railroad	—	76
Front Street, Mission and Ocean Railroad	11	12
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	150	160
INSURANCE COMPANIES.		
People's Insurance Company	90	95
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	110	116
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	91
MINING STOCKS—WASHOE DISTRICT.		
Alpha	24	25½
Baltimore American	—	—
Belcher	22	25¼
Bullion, G. H	20	21
Crown Point	52	52½
Gde (Va.)	—	9
Confidence	43	50
Consolidated Virginia	—	10
Chollar-Potosi	310	320
Caney	3¾	4
Exchequer	11	14
Empire Mill and Mining Co	60	70
Gould & Curry	115	117
Gold Hill Quartz	42½	70
Hale & Norcross	138	140
Imperial	70	74
Julia	1½	3
Justice and Independent	8	9
Kentuck	165	170
Lady Bryan	55	60
American	11¾	12
Occidental	24	25
Ophir	20	20¾
Overman	102	104
Segregated Belcher	9½	10
Savage	88½	89
Sierra Nevada	48	50
Union	—	—
United States	—	—
Yellow Jacket	47¾	57¾
MISCELLANEOUS MINING STOCKS.		
Amador (California)	280	290
Aurora, White Pine	—	20
Eureka, (California)	—	225
Gelden Chariot (Idaho)	40	42
Silver Cord (Idaho)	—	—
Golden Rule, California	10	—
Mohawk (California)	—	—
Pocolille, White Pine	—	10

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, July 2, 1869.

Flour, Extra, ₱ bbl	$4 75	@	$5 50
Do. Superfine	4 25	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 40	@	1 65
Oats, ₱ 100 lbs	1 50	@	1 75
Barley, ₱ 100 lbs	1 00	@	1 15
Beans, ₱ 100 lbs	5 00	@	6 00
Potatoes, ₱ 100 lbs	80	@	1 15
Hay, ₱ ton	10 00	@	17 00
Live Oak Wood, ₱ cord	9 00	@	10 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GRGCERIES, ETC.

Sugar, crushed, ₱ lb	14¾	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	10	@	20
Do. Java	—	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5¾	@	6¾
Coal Oil, ₱ gallon	45	@	47¾
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	35	@	38
Isthmus Butter, ₱ lb	32½	@	—
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	35	@	42½
Lard, ₱ lb	15	@	17
Ham and Bacon, ₱ lb	14	@	16
Shoulders, ₱ lb	7	@	8

Retail Prices.

Butter, California, fresh, ₱ lb	45	@	50
do. pickled, ₱ lb	30	@	—
do. Oregon, ₱ lb	20	@	25
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Do. Sage, ₱ lb	25	@	30
Eggs, ₱ dozen	50	@	55
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1½	@	2
Potatoes, Sweet, ₱ lb	—	@	—
Tomatoes, ₱ lb	5	@	10
Onions, ₱ lb	5	@	8
Apples, No. 1, ₱ lb	5	@	6
Pears, Table, ₱ lb	5	@	7
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	18
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O	7	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, July 2, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1¼c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2½c ₱ lb.

Scotch and English Pig Iron ₱ ton	$42 50	@	$—
White Pig ₱ ton	36 00	@	—
Refined Bar, bad assortment ₱ lb	— 03	@	—
Refined Bar, good assortment, ₱ lb	— 04	@	—
Roller, No. 1 to 4	— 04½	@	—
Plate, 5 to 9	— 04½	@	—
Sheet, No. 10 to 13	— 04½	@	—
Sheet, No. 14 to 20	— 05	@	—
Sheet, No. 24 to 27	— 05	@	—

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb

Sheathing, ₱ lb	—	@	26
Sheathing, Yellow	— 20	@	21
Sheathing, Old Yellow	— 10	@	11
Composition Nails	— 21	@	22
Composition Bolts	— 21	@	—

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	—
Plates, I C Charcoal	—	@	11 00
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	—	@	35

STEEL.—English Cast Steel, ₱ lb — @ — 15

QUICKSILVER.—$ lb — @ 60

LEAD.—Pig, ₱ lb — @ 8

Sheet	10	@	—
Pipe	11	@	—
Bar	9	@	9

ZINC.—Sheets, ₱ lb — @ 11

BORAX.—California, ₱ lb 35 @ 38½

LATER FROM THE AVITOR.—Before going to press, we learn of another trial of thie new aerial vessel at the "Aviter Works," on the San José Railroad. Report saye that it rose proudly into the air, "sailed around" the rural burg with fine effect, and then settled down again like a new fledgling, still ambitious for further assays. This was only a working model, 28 feet long, 8 feet average diameter, cubic contents 1,360 feet and weight 82 pounds; gae 78 pounds. Man has eo nearly mastered this problem of aerial navigation that there prevails a very general faith in the final success of some machine of the kind. Further particulars will be obtainod, if poesible, of the next voyage.

CALIFORNIA SALMON AT THE EAST.—An extensive fish dealer at Sacramento has received an order from St. Louis for regular supplies of California salmon, to be sent by the Pacific Railroad. He immediately shipped a lot done up in ice. This is a new and unexpected development growing out of the completion of the overland railroad, and may possibly lead to important results. The Pacific Coast can supply the world with salmon.

Mining Summary.

THE following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

MERRIMAC.—*Miner*, June 19th: This claim is likely eoon to be etarted. Eestern owners have writteu to have a thorough investigation, with a report as to prospects.

MORNING STAR.—Work is now on drift number 8 in the lower level.

PENNSYLVANIA.—Of the product from the ton of ore recently taken to Washoe we can yet learn nothing.

OWNERS COMING.—We heer of several large owners of mining intereets in this cnunty residing East who are coming here soon to eee for themselves how the land liee. This is the only proper way.

ITEMS.—The two long tunnels at Bullion are going ahead....The emelgamating room of the M. C. mill is going np with elecrity. ....Another change has taken place in the Globe tunnel, and the rock works better. ....The Plecerville corporation has manifested a sign of life in writing here to know the amount of taxes due on its mine.

COMING BACK.—*Chronicle*, June 19th: N. Graff, formerly Snpt. of the Tarshish mine, but at present Snpt. of a silver mine at Sen Mercial, Sonora, Mexico, is coming back, and will probably take cherge again of the Tarshish.

CALAVERAS COUNTY.

UNION SHAFT.—*Chronicle*, June 26th: The baling from the old Union shaft continues without abatement—even of the weter. There are some eight feet still iu the mine. Champion, Peters & Ahnert, the proprietors, will prove successful, or "go through" in the undertaking.

PALOMO.—Letter to seme from San Andrees: The new hoisting works end batteries are perfection. They have a new style of shaking table invented by Mr. Brief, the foreman, who, I believe, has applied for a patent. It is on rollers, instead of being suspended from freme-work; and is moved by a crank, without any side motion. I am informed that the quartz mining intereets at Angels Camp are prosperous, the mills all being in active operetion end doing well. At the Big Mill mine they have struck it rich—rock that will pay over $1,000 per ton—that is, they have 15 inches in width thet will pay that amount, while the balance paye from $10 to $20.

LOS ANCELES COUNTY.

SOLEDAD.—*Star*, June 19th: Messre. J. A. Hayward & Co., bankers, received this week 50 ozs. gold from the Eureka Miuing Co., Soledad, being the result of a nine daye' run. The weter is becoming very low, and operations will have to proceed hereafter slowly.

MARIPOSA COUNTY.

The *Gazette* of the 25th says that rock from the Mariposa Co'e vein in that towu, ie being proepected at the Benton mills by the dry plen. If thet plen seems best enited for the rock, the Mariposa mill will be recoustructed.

NEVADA COUNTY.

NORTH BLOOMFIELD.—*Transcript*, 23d: The Gravel Mining Co. have shut down in their cleims, and are working with ell energy to complete their ditch from Little to Big Cañon Creek. The line of the ditch is over rough grouud and will require a large amnunt of fluming and blesting.

SNOW POINT.—Same of 25th: The prospect at this old camp is first-rate. The Weter Co. has a mine regarded as one of the best on that ridge. The company has been stripping all eummer and running from 600 to 800 in. of water. McCarrow & Co. are drifting in the old Golconda cleims, and at their last clean up took out some gold which very much resembles that on the opposite ridge, at Minnesota, in Sierra County. These claims were abaudoned for many yeare, until this season. Cowger & Co. are runniug a drifting tunnel, and have excellent indicatious. Price and his men are still at work, as they have been for many yeare.

MOORE'S FLAT.—The Eagle Co. have commenced sluicing through their new tunnel, and are running for the rich channel worked by Hickey several years ago. ....The Illiuois Co's claims and Hickey's have been worked steadily and are paying well....The old St. Lewrence ie owned and worked by Chinamen....Atwater & Knotwell have got their pipe dowu and ready to run water to their claims.

WOOLSEY'S FLAT.—We learn that the town never looked as prosperous ae at preeent. The XIX Co., owned by Marks & Co., are doing spleudidly, and give employment to a good many men. Last week they cleaned np $11,000, and tbe prospect ie that their next will be larger.

Shultz & Stober are working with energy, and it is paying them well.

Reed & Mills are working tbe Blue Bank claims. They heve been drifting for years, and everybody knows they are doing well.

RELIEF HILL.—Same of 26th: For several years companies prospecting for the gravel channel, now have fair promise of succese. The North Star ground is worked by the Eureka Lake Co., and they are doing well. The Wakashore Co. employe 12 men, now drifting, and the claim hes been for some time averaging $12 per day to the man. This company has etruck the chennel, and is in 200 ft. further than eny other. The Eagle claims heve 100 ft. fell, and are within 60 or 80 ft. of the pay channel. They will commence washing this fell and run their tunnel up to the bank. Reasoner & Bro. are obtaining favorable results. When the Eagle Co. strike the dirt, other claims will be eterted, and there is every prospect that Relief Hill will become a lively cemp.

THE MANZANITA CLAIMS.—Seme of 29th: Marselus & Meltman have started a new tuunel, and ere siuking a ehaft on a line with the tnnnel, in order to get a new face in the bank for washing. The tunnel is to be run on a 5-inch gredo. It will be 1,300 or 1,400 ft. long, end will eneble the company to work 38 ft. deeper than at present.

JONES' BAR.—oonsidereble mining is being done in the vicinity of Jones' Bar this season. Several companies are prepering for washing, and will commence as soon as the river gets low enough.

MINING AFFAIRS.—Gress Vallcy *Union*, 25th: There was a rumor a few deys since that the Miners' Union has backed dnwn from its position of hostility to the giant powder, and would now go entirely ageinst Chinese labor in the mines. The rumor was false and the strikers remain firm as ever against the gient. As to Chiuese labor, no one has proposed to introduce that into the mines, and hence there is no truth in the reputed new position of the minere. The Superintendents of the idle mines, Empire and North Star, are in San Freuoisco, and we understand they are determining upon some method of going to work et an early day. It is probable thet iu the first part of next week, we shall know what is to be done with the mines. At the Eureke and the Idaho, matters move on in the old quiet way, and both mines will surely pay their regular dividends at the first of next month.

EMPIRE MINE.—Yesterdey morning the Empire Miniug Co's mill started up to crush the rock which had been heretofore taken out. There are betweeu 200 and 300 tons of rock in frout of the batteries. Soou after the whistle souuded a number of men, willing to work any way the proprietor wanted them to do, applied for employmeut, and Capt. Lee concluded to try once more to fill the miue. Yesterday afternoon, at 4 o'clock, about 30 men had been employed, and there was every prospect that the full number wanted could be obtained by to-day. If, however, the Empire can not be filled with men willing to work as the company want work done, the mine will be closed down indefinitely.

VICTORY MINE.—Grass Valley *National*, 25th: This mine, on Massachusetts Hill, has been worked during the summer, for eight years, the weter having occasioned intermissions. A shaft hes been sunk to the depth of 20 ft., and a drift run 300 ft. on the ledge. The mine has been thoroughly prospected and they have a well-defined ledge. Considerable rock has been taken out, which has averaged $14 to the ton. A whim has been erected for hoisting, and it is the inteution of the owners to put up steam mechinery soon. The mine is owned and worked by James McCann and others.

PLACER COUNTY.

DAMASCUS. — Correspondence of *Stars and Stripes*, 24th: "Last week the Mountain Gate Co. got through with their tunnel and raised their ehaft to gravel. This is the most extensive tunnel in Placer County, being over 3,000 feet in length, and has taken much money and many years' labor. It taps a claim of great extent.

Robert Lewis has got a splendid prospect in the Mill claim, and it is likely to prove one of the best in Placer County. Charley Cook has made a clean up and harvested a splendid lot of gold. Billy Cameron is doing pretty well in the Big Gun claim, and times are quite lively."

TRINITY COUNTY.

NEW RIVER.—*Journal*, 26th: The Portuguese Co. have begun cleaning up, and have taken out already about $4,000, with considerable washing up to do yet. John Keach cleaned up with good pay. There are 30 miles of New river offering first-rate inducements tn miners who would prospect and work as they do in other localities.

LEWISTON.—We understand that two or three companies intend going into the river. There is every reeson to believe that the Trinity will be lower this summer than ever.

MINERSVILLE.—P. Van Matre brought $858 of fine-looking gold dust to Weaverville, recently picked up on Little Mule creek, during three weeks' piping. The gold is coarse, one piece weighing four ounces. It was from the Wheedon claim.

LOWER TRINITY.—McCallum & Clifford have first-rate prospects on French creek, a stream emptying into Trinity river at the heed of Taylor's Flet. Gratifying results have been obtained by other partiee in Sawmill creek.

JUNCTION CITY.—A correspondent writes: Most of the miners are cleaning up, and money is beginning to be plenty. As none of the claims have finished yet, I cannot give you the amount of the gold yield. Joseph McGillivray is now in San Francisco, purchasing iron-pipe to plece across Trinity river to carry water from his Cañon creek ditch to claims on the flat and bar opposite. The flat on this sids of Cañon creek is eaid to prospect big, and, could water be had, would pay immensely. Mac seys if any number of miners will pnt up $1,200, subject to his order when the work is completed that he will bring water on the ground for them, and give them their money's worth in water.

YUBA COUNTY.

A RICH MINE.—*Appeal*, 24th: A gentleman from the upper country, in Camptonville last week, saw the proceeds of the Eureka mill for ten days' run with five stamps, crushing only day times, 600 ounces of gold, valued at $10,000. He was informed thet their clean np was $6,000 from five days' washing. While at work they took out one specimen valued at over $1,500. The owners are citizens of Camptonville.

Arizona.

RICH DISCOVERY.—Visalia *Delta*, June 23d: Messrs. Moss, McGuire end Belcher returned last week, from a two month's cruise between White Pine and the Colorado. They have made some of the richest discoveries made on the coast—their ore running from one hundred up into the thousands—and ledges from three to thirty feet in width, with an abundance of wood, weter and grass; within a very few milee ere immense forests of yellow pine. They will etart out egain in a day or two with full eqnipments and eupplies.

NORTHERN ARIZONA.—It is reported that Gov. Sanford and Capt. Mexwell, have organized a party and equipped, for the purpose of exploring the Apache country in search of plecer mines. Each man furnishes his own outfit end all share in the proceeds of the adventure. They expect to leave Fort Yuma in July.

Colorado.

AWANDA LODE.—Georgetown *Miner*, June 17th: Pearson & Fellows, after several months' hard lebor, struck, on Tuesday, 20 inches of eulphurets of eilver and galena. The ehaft is now 20 feet deep, the crevice five feet, between solid walls.

ITEMS.—They have struck a 12-inch vein of first-class mineral in the east drift on the Lilly lode, on Brown Mountain.....A. Johnson is obtaining very rich ore from the Major Anderson lode, Griffith Mountain.....Work on the crushing end dressing works is progressing rapidly.....Stewart's reduction works were flooded by high water on Monday night, and he was forced to shut down.

EQUATOR.—Ninety-three tons of second-clase Equator ore, worked by Huepeden & Co., yielded per ton in ounces saved 115.8. Per ton in coin $149.72.

TOPEKA.—Ceutral City *Herald*, June 9th: Wylie & Hurst have commenced work on the Topeka lode, Bates' Hill. A shaft 75 feet was sunk some years ago, and good ore reached, but not rich enough to pay at the price of labor then ruling. It will pay very well now.

ITEMS.—The dams on all the claims on South Clear Creek have been washed away. Some of the miners were taking out pay and fought against the water for a long time, but they were not able to withstand it. The creek is very high and still rising. ....A new lode has been found in Mountain House district, which, at a depth of 18 feet, shows a crevice of four feet, with ore one foot wide.....John Sensenderfer has got his 20-stamp mill under way. It will be kept bnsy during the summer.....Cameron & Moore have found a new lode in Cascade district, Clear Creek County. At a depth of nine feet it showe a crevice of eight feet, with a vein of ore one foot wide. A select epecimen assayed by Prof. Burlingame, contained silver at the rate of $1,716.26 in coin to the ton. The owners refueed $12,000 for one-half of it.....Samo of 12th: The new discovery near Dory's Ranch is called the Ruby lode. Ore from it contained $1,071.20 coin per ton..... Same of 16th: Mr. Andrews, of Nevada, brought down to-day 105 ouncee, the result of one week's run on ore from Phillips & Burns' claim on the Jones lode. The ore yields 30 ounces, or $630 per cord, in a stemp mill.

CLEAR CREEK.—The Weshington are putting machinery into their mill. A new pocket has been found in the Brown mine. The furnaces are in full blast. The Baker mine is looking better than ever. A rich deposit of ore has been found. The mill will be ready in ten days. Bruckner's patent eylnder will be put up in a short time. Stewart is running on Equator ore. The Wilson & Cass Co's mill will be the finest in the county.

GILPIN COUNTY.—Population is larger than ever before eince 1862. If it continuee to increase es during the past moutb, our monthly product of gold will reach $300,000. Many valuable mines, whicb for years have been deserted, will be worked.

ITEMS.—Central City *Register*, 17th: Three and a half cords of ore from the Jones lode yielded five ounces gold bullion, worth over $2,200.....The Black Hawk produced last week from 28 corde of ore, 170 ounces of gold bullion. The Bobtail Co. produced 92 ounces.....Our daily shipment of bullion has been kept up to the averege of $10,000 thus fer this month. ....An assay by Von Schulz, of ore from the Coaley lode, gave 22,379.94-100 ozs., —or $29,094.92 coin value per ton of 2,000 pounds.....Van Camp has struck another big pocket in the Creighton lode.....An aesay ycsterday of ore from the Kremlin, Cascade district, gave a yield of 283 ozs. silver per ton.

IDAHO—TRAIL CREEK.—The Bennett Co. have got their mill nearly completed. Chavenne & Cramer are putting up an arastra for reducing surface rock from the Coyote. Judge Colviu has the walls of his fine stone mill nearly completed. He also has men at work putting the shaft in condition for takiug out ore. About Mill City eeveral new lodes promise well. Theo. Lowe has struck a veiu near the Ohio Gulch eaid to promise well. Jacob Snyder has his arastra running on ore from the Albro lode, obtaining six to eight ounces gold per cord. Work is about being re-commenced on the Lincoln tunnel, by the King Bros.

BULLION.—Denver *News*, 16th: At the First National Bank to-day were four bars of gold bullion, weighing 336 ounces, and valued at $7,000. At the Colorado National were seven bars weighing 800 ozs., valued at $17,000. During the past three days the U. S. Mint has turned out 36 bars, weighing 2,200 ozs., and valued at $50,000.

LAKE COUNTY.—Letter from Granite: Matters are looking up. Rich ore is coming out of the Yankee Blade. Free gold visible. The mill will be in running order by July. Pertridge is getting fine ore. He and Dr. Morrison have been runniug their mill on the Hattie Jane end Solux Tyee lodes with grand results.

The great excitement of ths hour is the discovery of a gigantic lode in the vicinity of the Yankee Blade. It is called the Johnston, and takes the shine out of every lode in the district. At a depth of 21 feet the vein is four feet wide. The ore is literally peppered with gold.

Idaho.

NEW DIGGINGS:—Idaho City *World*, June 18th: From Mr. Smith, Deputy Collector, we get information of new diggings 18 milee from this city, on the main Boise river, ebove the mouth of More creek. Mr. Smith and his brother sunk holes 20 feet, and obtained from 10 to 50 colors all the way down. Along ou the river bars, for a long stretch, where free water can be had for nine months in the year, Mr. S. thinks the diggings will pay from $6 to $8 per day to the hand.

WARREN'S DIGGINGS.—Mr. Bacon reports miuing at Warreu's to be prosperous in placer mines, with a fair eupply of free water. In quartz mining a good deal is done. The Pioneer mill, put up two years age, is crushing custom ores, and the water mill is running on ores from the ledge owned by the mill company or from neighboring ledgee. A lot of 53 tons of ore out of the Rescue ledge gave a product of nearly $50 per ton all through, and some of it went above $80.

FLORENCE.—The mines are paying better than for two or three years. But, through lack of water, mining will soon bs over for this year.

MOOSE CREEK.—The mines have already commenced to fail. Only a few have gone there from Warren's, but nearly all who had were back again. All pronounced

the diggings comparatively a humbng. The area of mining ground is limited, and the richness of ths best clsims have been overrated. A few had sncceeded pretty well, aad the traders who got in first had made money.

Silver City *Tidal Ware*, Jnne 22d: Al. Cago writes us from Middle Fork, Owyhee, June 14th: "I think that at least two large lsdges already found will prove to be paying ones. There is also an extensive range of 'wash gravel' here, apparently all ou the surfacc.

Nevada.

COPE DISTRICT.

Shermantown *Telegraph*, June 21st: From Messrs. Furst aad Cavuaagh, just returned from Elko, we glean the following. The reported new diggiags to the north of Elko are a grand hnmbng, the excitement having bcen got up to assist the sale of a lot of plng horses.

Inland Empire, 22d: Persons returning to this city from the reported rich gold fields north of Elko, geuerally report the same a hnmhug. It is said that there is one gold bearing ledge of undouhted merit, and aside from this there are no mines, of any character, in that whole section of country.

REESE RIVER.

Silver Bend.—*Reveille*, June 26th: Belmont is beginning to recover from the effects of the White Pine fever. The town is alive again. The principal ore yielding mine of the dlstrict is the El Dorado South, beloaging to Messrs. Leon & Co. The maiu incline is down 270 ft., and shows a well-defined vein in its eatire course. At 240 ft. the vein has been piercod and shows a thickness of nine feet of sulphurct oro. Assays reaching up to a thousand dollars can he obtained from this portion, and Mr. Leon is sure that it will yield $150 per ton at the mill. Upwards of 500 tons of ore aro out ready for the mill.

Besides the El Dorado South, ore is being takeu out of the Transylvania, though the work is restricted to a company of miners who have a contract for takiag out ore near the surface. A number of other mines are beiag prospected, and there is some talk of the Combination Co. resumiug operatious.

Battle Mountain.—The business of shippiag ore to San Francisco has been inaugurated, and the result satisfactory, though the railroad charges $14 per ton, a price which will be greatly rednced after the 1st of July,

Miniag is carried on with activity. The Great Ceutral Silver and Copper Mining Co., have commenced on a number of claims and will soon ship ore.

The Battlo Mountain Copper and Silver Mining Co. are working the Bay View and Red Rover ledges, and are sacking ore for San Francisco.

The principal mines now in process of developmeat are the Uaion, Arizona, Mouataiu View, and Red Rover. A nnmber of discoveries, hoth in silver aad copper, have recently heen made. A. Jacobs & Co. have discovered a mine of argentiferous galena which assays up in the huudreds, and the camp has a lively appearance.

The Silver interest in the district looks promisiag. The Little Giant mill, of five stamps, has averaged $1,000 per day for the last six months. It crushes wet, without roasting, and is distant about seven miles from Battle Mountain Station.

The Mettacom.—This mill has been undergoing repairs and will be started on the 1st of July, on the orcs of the Buel North Star miue, of the Lane and Fuller Co. The mine is now yielding six tons of high grade ore per day.

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

Chollar-Potosi.—*Enterprise*, 23d: This mine is yielding at the rate of 230 tons per day, averaging $48. The drift north at the 1,100 ft. level has reached the Hale & Norcross south line.

Looking Well.—Same of 26th: The Sierra Nevada mine is looking exceedingly well, and the mill is running to its full capacity.

Being Overhauled.—Messrs. Fair & Mackay, who lately purchased the Trench mill, at Silver City, are refitting the same. Two new boilers are just put in place, each 16 ft. long by 58 in. diameter.

Still Burning.—27th: The fire in the Crown Point and Kentuck mines, Gold Hill, is still burning. It has been so walled in that it cannot go beyond certaiu bounds, which is all that could be dono, and it will probably burn in a smouldering way as long as there is any timber in that portion of the two mines which has been abandoned.

The Bullion.—The drift east, at the 2,400-ft. level, is still progressiag.

Chollar-Potosi Bullion.—We yesterday saw 16 hars of bullion from the Chollar-Potosi, valned at a little over $40,000. The yield of the mine thns far, duriag the month, has been $110,000, and by the end of the month will reach $160,000.

Good Yield.—The Hale & Norcross is yielding over 200 tons per day. The connection with the Chollar-Potosi has been made, and there is now a good circulation of air in the lower level.

Occidental.—The Occidental Co. are making good progress with their new tunnel. The rock is becoming softer; water about the same.

Imperial-Empire Shaft.—This shaft is now down 1,157 ft. No ore has been fonnd as yet.

Kentuck.—About 50 tons of ore per day is being raisod from this mine.

WHITE PINE.

Bullion Hill.—*Inland Empire*, June 22d: In Bullion No. 10 a shaft has been sunk 30 feet, and vein matter found for a width exceeding the depth of the shaft, as no wall-rock has beeu encountered on either side. This mine is yielding chloride ores of high grade. The other mines have not been so far developed, but all show high grade ores. We saw ore taken out which contained black horn silver similar to that of the Cole & Johason mine in Piato District, and from which we published an assay of $21,373.51. We brought away two specimens of ore that the best mines on Treasure Hill need not disown. They are as perfect specimens of horn silver as were ever seen.

Items of Mining Progress.—*Empire*, 20th: Pogonip and Othello center shaft ore yielded by assay $700 to the ton.....22d: The Hidden Treasure (original) is yielding excellent ore. In the southern works the deposit is on the increase in quantity and quality. We were shown specimens which were almost the pure quill—horn silver. ....23d: A body of rich chloride was struck a few days ago in the Burns shaft on Chloride Flat.....24th: A rich strike in the Ince Hall mine: near the Eberhardt, yesterday. A specimen ncarly pure horn silver, and weighing from 20 to 30 pounds, is on exhibition.....Among the articles placed in the corner stoae at Shermantown, Thursday, was a specimen of ore from the Keystone shaft, Eberhardt mine, worth accordiag to assay, $24,000 per ton. It was reduced to a perfect square by sawing, and upon either side bore the stamp of a $20-piece. Dr. E. X. Willard and John Turner donated it for the purpose mentioned..... *News*, 21st: Four tunnels are piercing the hill south of the Mazeppa mine.....The Little Bilk, on the northwestern slope, has a shaft 32 feet down, and fine indications. ....Operations have been commenced on the Dreadnought.....Five men are at work in the Phœnix shaft, now down 100 feet, with flatteriag prospects.....The Paris, on Pocotillo Flat, has a 38-foot shaft. The ore increases in richness with the desccnt..... 22d: Omega shaft is down 85 feet, well timbered.....23d: The rich ore in the Mazeppa still holds out.....Rich chloride ore is coming out of the Nettie Lamar..... Charter Oak shaft down 60 feet.... The sonth incline of the Hidden Treasure Consolidated is down 51 feet, and the ledge is widening. The face of the incline is a mixture of black spar and quartz, with a fair amount of pay ore.....Work ou the Silver Wave is prosecuted day and night. The shaft is 40 feet deep. Ten tons of ore is sacked upon the dump.....25th: The Burns mine, on Chloride Flat, yesterday, struck pay ore.....The Manhattan mine, on the western slope of Argyle Hill, started up yesterday. The two parallel shafts of the old Argyle, 30 feet deep (inclining on the foot-wall), are being connected at the bottom by a drift, from which rich chloride ores are being taken.

Mills and Smelting Works.—*News*, 22d: Yesterday, sixteen ox teams loaded in Elko with the machiuery for one of the best 10-stamp mills in the country—to he taken to Reveille and put in running shape in 90 days.....23d: Lucas & Logan's, at Swansea, a grinder of capacity equal to ten stamps, is now so far advanced that it will be in operation within three weeks....Mosheimer's smelting works, in the cañon near the County Hospital, are approaching completion. The boilers were put in position yesterday, and workmen are now building the furnaces.....Elko *Independent*, June 21st: The Metropolitan mill is the most convenient of any we have seen. The company have some 50 tons out, the crushing of which will be commenced on Saturday. ....Same of 25th: On Sunday and Monday 300 tons of freight, consisting of lnmber and machinery for Stanford's 30-stamp mill at Eberhardt City, left Elko.....Treasure mill continues to crnsh daily abont 36 tons of oro, and has a supply of 500 tons on the dump.

Bullion.—*News*, 23d: Wells, Fargo & Co. yesterday made what we believe was the heaviest shipment of bullion ever made in one day from White Pine—fifteen hars to San Francisco, $16,465.61, and three hars to the Eastern States, worth $5,657.61, making a total of $22,123.22.

From the "Mining Review" of the *News* for the week ending June 19th, we extract the followiag: "Treasure Hill now employs 1,463 miners, who extract 435 tons of good milling ore daily, and snpply of ore now lying upon the various dumps awaiting milling facilities amounts to 4,171 tons. According to milling tests of fair samples of this ore, it yields under stamps from $100 to $600 per ton. We have shipped this week $65,078.63, and with the ore on dumps and at the mills, we have about $1,500,000 left."

New Mexico.

Moreno Mine.—"S." writes the Colorado *Register* from Elizabethtown, June 10th: "Maxwsll's lode is the richest on record. For three weeks the quartz has yielded at the rate of $210 per ton. It has one shaft 80 feet deep and drifts esch way 50 feet. The orevice averages three feet from the surface down. Mr. M. has a 15-stamp mill, and for three weeks has taken out from $15,000 to $16,000 per week. Many other lodes have been discovered, some of which promise well. Gulch miniag is prosecuted with vigor. Evcry company that has water is hard at work, Moreno ditch is heing brought to completion. Already the water is turned in at the head, and 12 milcs puddled."

Tierra Amarilla.—Albuquerque *Review*, May 29th: It is reported that gold has been discovered in large quantities at Tierra Amarilla. Several nuggets of considerable size were found.

Utah.

Ogden.—Corinne *Reporter*, June 22d: A mining district has been organized in Ogden, and mining laws adopted at a meeting of the Saints, which conflict with the U. S. mining laws. A number of rich quartz specimens have been brought to town by parties who are dumb in regard to the locality. We have no reliable information, but infer from the orgaaization of a maining district the other day, that something is in the wind. The Mormons have become aware that prospecting parties are in the mountains, and many have knowledge of argentiferous deposits which might be stumhled upon by hunters, who would locate and work them in the very face of the Church; hence the organization of a district hy the Saints to secure the valuable ground, if there is any.

Wyoming.

South Pass Items—*Sweetwater Mines*, June 16th: Pony Steel and Dr. Bar, on the Dexter lode have a shaft down 12 feet, and the quartz is looking fine....A coutract has been let to sink 35 feet deeper on the Nellie Morgan....Argenta is a ledge discovered by Sayder and Dixson on the 12th inst. There is a crevice of 18 iaches, and the quartz exhibits free gold in abundance. The ledge is on the Jim Dyer hill.

Rock Creek.—The Savage boys have struck a rich streak in Rock creek 20 feet wide. The company are putting in a bedrock flume, and will be ready for mining iu a short time. All the claims in Rock creek are paying well.

Mason & Co's 10-stamp mill arrived on the 14th inst. The machinery is the finest ever turned out of the Eagle Works at Chicago. We believe it is the intention to run on custom rock.

Tin-foil Wall-Hangings.—A new French invention is for painting in oil upon tinfoil, to be applied to walls in a somewhat similar manner as paper-hangings, but with a water-proof mixture instead of the ordinary paste. This new wall cover adapts itself perfectly to all moldings and other irregularities. It receives gilding, and preserves it without oxidation. In its preparation, the tin-foil is spread upon dampened glass, and preseuts a perfectly smooth surface to the artist. By its use, the disagreeable smell of paint, which is inseparable from the ordinary method of decorating walls, is entirely avoided.

Oil for Clocks.—Fill a flint-glass bottle with common olive oil aud immerse a bright clean strip of lead in it, setting the bottle in a window, where it will be exposed to the rays of the sun for several days. All the gummy matter will adhere to the lead, leaving the oil clear aud thin, and not liable to become thick by age.

Cabinet Collections—Prof. Ward.

Prof. Osborn, of Lafaystte College, has an article in ths *American Exchange and Review*, upon economic geology, from which we extract the following:

"We hsve noticed the stirring propensity in public iastitutions to follow out the plan adopted in private collections of attempting a reputation upon some rare specimens, some beautiful 'star piece,' some unheard of species or some peculiarity which it is more than probable that no economical mineralogist, geologist, or metallurgist would ever think of seeing, or care to see again. We need collsctions of greatsr fnlness as to species and varieties, greater uniformity and comprehensiveness, and collections not overgrown or guilty of hypertrophy in only special departments, but possessing the largest varieties, and representing in their proportions the exact importance of the representative minerals, formations, and ores as nature in the field and in the bed and mine presents herself. It is variety in extent and comprehensiveaess, and representation as a whole rather than isolated beauty, rarity of individual specimen, or dovelopment of special species or classes, which is to constitnte the excellence and value of economic collections. The collection in Rochester made by Prof. Henry A. Ward, of the university in that city, is most complete. To those who have extensively visited collectious at home and abroad it will he sufficient to say that no collection of lithological specimens surpasses this, except that at the Garden of Plants, Paris, gathered by Cordier and not completed till after an experience of seventy years. Indeed, in some phases we think the American collection preferable. None covers more hroadly the fields of economical science. The varieties of species, of forms, and conditions give the student room to prepare himself for the emergencies of miaing and metallurgical practice and in this respect the study of such a collection is invaluable."

Larmanjat'e Single Rail for Common Roads.—Some time sinoe, a party of civil engineers, newspaper reporters, and men of science, met at Raincy, near Paris, to witness experiments on a new system of railroad invented by M. Larmanjat.

The track had been laid from Raincy to Montfermeil, a distance of about four miles along the public highway. The novel feature of the invention consists in a single rail, like a long ribbon, extending along one side of the road. One wheel placed at the forward part, alone hears on this rail, while the two other wheels rest on the ground. The cars are furnished with two wheels, placed underneath in their long axis, which rest on the rail and support their weight, while two other wheels, destined to preserve their equilihrium, are placed outside.

A few minutes after starting, and while the train was running at a speed of ten miles an hour, it reached a grade of 410 feet to the mile, which it asoended without any apparent slackiag of the speed. The train ran to Montfermeil in twenty minutes and returned in seventeen. The general result of this trial trip was satisfactory in every respect, and M. Larmanjat received the approbation of all present.

A French Velocipede.—M. Gnillermin's machine has three wheels, and is partially covered by an india rubber horse. This horse contains spiral springs and wheel work, which may be wound up so that the concern will run three miles without stopping. The head of the horse contains the provisions, and the body tho valise, of the rider.

Velocipede Patents.—At a meeting of manufacturers, held in New York on June 7th, it was determined to resist all claims under the Lallemont and Smith patents, and to recognize the Hanlon patents alone. A fund will be raised by subscription to meet the expenses of the expected test suit.

Interest in New York.—The *Commercial Advertiser* of June 16th, speaking of the high ruling rates of interest, says: "Wall street borrowers have to pay rates equivalent to thirty per cent. per annum on Government collaterals and fifty per cent. on stocks, while the demand from the country is increasing."

A Large Rat.—Mr. Stratton, who resides near San Leandro Bridge, killed a rat on his premises a few days since, which, the Alameda *Gazette* says, weighed seven pounds oleven ounces avoirdnpois.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

A. T. DEWEY. W. B. EWER.

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San Francisco:
Saturday Morning, July 3, 1869.

Notices to Correspondents.

ESAU, Nevada.—The economically usefnl animal naturally adapted for dwelling at great elevations, are the yak, the Kiang or wild horse *(Equus heminou)*, the llama tribe, and possibly the Bactrian (two-humped camel). The yak is by far the most valuable in such positions, not only as a beast of burden, but at the same time as a milk and butter producer it is the least injuriously affected by cold or rarefied air; bnt the range of temperature at which it can flourish is only very limited. The real yak can scarcely exist during summer at an elevation lower than 8,000 feet above the sea level, and large herds in their native wilds have been observed as high as 18,600 or 18,900 feet, and on one occasion at 19,300. In snch regions these large herbivora only ohtain a subsistance by daily traversing large tracts, and consequently are good travelers. It may be inferred from the circumstance just named that they would form excellent pack animals, especially during the winter season of the Sierras.

RAINBOW.—The purple dyes obtained from coal-tar are produced by the oxidation of analine, by bichromate of potash. It is a bronze-colored substance, capahle of dissolving in alcohol, with a beantiful purple color. It is indifferently soluble in water, but more soluble in acidulated water. Like indigo, it is perfectly decolorized by the hydrated protoxide of iron; the color heing restored again hy exposure to the air. It dissolves in concentrated sulphnric acid, forming a green solntion, which, upon the addition of water, precipitates the color unchanged. Its color is somewhat intense, as one pound of the solid substance will dye 200 pounds of cotton, a moderately dark lilac. The color is a permanent one, not being acted on by light, heat, acids or alkalies.

I. Y. S.—The extraordinary erosive power of flowing water is exhibited in a most marked manner in the Himalaya and Thibet, where, according to the brothers Schlagenweit, the erosive action of many of the smaller rivers of the elevated region is 1,200 to 1,500 feet, while the larger ones traverse eroded valleys of 2,000 feet and upwards, a few upwards of 3,000 feet, steepness of descent, and great rain falls are the two chief causes.

GRINDER.—Chloriue gas, for the purpose of dissolving gold, ought not to be employed at very high temperatures, such as red or white heats, as the chloride of gold becomes decomposed at elevated heats. A temperature considerahly below boiling water, accompanied by moisture, is practically the most efficacions.

THE Mercantile Library benefit at the California Theater resulted in a sum a little short of $5,000. Of course this is not the means depended upou to place the Library on a sound financial footing; but as an evidence of the high favor in which the Mercantile Library stands with the publlic, the demonstration was unmistakable.

Volume XIX.

We herewith present onr readers the initial unmber of volume nineteen of the MINING AND SCIENTIFIC PRESS. While we are not oblivious to many imperfections and short-comings in its management, we feel conscions that we have ever pressed steadily onward in earnest efforts to furnish onr readers with a poriodical which shall not only prove a valuable medium for diffusing nseful knowledge among the masses at home, hut which shall also constitute a fair representative abroad of the wonderful resources of the Pacific Coast, and the progress which is being made for their development.

No one periodical in existence furnishes a more comprehensive record of the progress of Mining, the Mechanical and Useful Arts, Electrical and Chemical Science, and of science and research generally, than does the MINING AND SCIENTIFIC PRESS. The information given from week to week is industriously selected from every possible sonrce, and carefully considered and collated by a competent editorial corps. While we aim to he nseful, we seek also to communicate information in a manner which shall be attractive and interesting, and within the comprehension of all. There is no field of nseful research which we do not cnter and explore for the benefit of the public. How far we have succeeded in making the PRESS acceptable to its readers, we can only jndge by the words and letters of hearty commendation hy which our toil is almost daily encouraged.

During the past few months, in reply to nnmerous and earnest solicitations, we have added a new feature, to meet the growing results of our agricnltural readers, and special efforts will be made, in the fnture, to render this an important as well as an interesting department.

We are aware that much study, and wide and correct information in the manifold walks of knowledge, and in the varied wants of snch a community as this, is absolutely necessary to render a jonrnal like the one here presented acceptahle to the progressive intelligence of the age; yet it will continne to be our endeavor to meet the end desired, and to attempt to furnish the people of this State with a journal of the character indicated, and one to which they can point with pleasure and with pride as a fair representative of the growing wants and intelligence of the Pacifio Coast.

COMMISSIONER OF MINING STATISTICS.—Mr. R. W. Raymond, Commissioner of Mining Statistics, is now on his travels, collecting materials for his next annual report to Congress. We learn from the Colorado papers that he was in that region ahout the middle of June, and that he would soon proceed to the mines still further westward.

In relation to the non-reception in this State of the Government edition of Mr. Raymond's late report, we learn from a Washington correspondent that the report was printed in February or March last; bnt that it had laid from that time until the first of Jnne in the Government hindery, either waiting its turn or the pleasure of the hinder, to he bound. The report is now ready for delivery, and may be had on application to some member of Congress. In the meantime the public has been compelled to depend for their snpply upon the private edition issned by J. B. Ford & Co., of New York. From the correspondent above alluded to we also learn that there is a special anthorization for snch pnblications, by law; hence, if private publishers bind and issue sooner than the Government, we suppose it is simply because the Government is in no haste to issue, and accommodate the people with the proceeds of the labor and money which has been expended at their cost.

Guilds and Apprentices.

Skilled labor in this conntry protects itself agaiust overcrowding and competition of labor by the formation of guilds and trades unions, whose principal office is to keep prices at fair rates, and in some degree to protect labor against capital. Justice and good sense are on the side of organizations of this kind when formed and administered on a liberal and intelligent basis. It happens that the chief practical point in the working of trade guilds is the prescription of regulations to new comers making *time* or apprenticeship in the same line of business, a criterion of employment, in the place of actual qualification to do the duty required hy the employer. In some of the old countries of Europe the laws have been shaped in the interest of persons estahlished in bnsiness, and have discriminated against beginners by extremely onerons regulations—snch as a seven years' employment in snbordinate positions before, for example, brick-laying or shoe-making, or look-tinkering, can be practiced without some authoritative interference. But it has heen fouud hy American travelers in Europe that the established practicing mechanics and tradesmen that have grown into existence under snch regulations, are of the most miserable and nnsatifactory kind; that it is impossihle ordiuarily to expect a good job of any kind at their hands. Within a decade of years these laws have been repealed in one European country after another; leaving the trades comparatively free, as they are in America.

Here there are found certain easily acquired trades that wonld suffer, it is supposed, by a general deterioratiou of workmanship without some arhitrary regulation discriminating sgainst heginners. Such are printing, the iron molders, stevedores, and other trades.

The penalty against capital for a disregard of the "law" is a strike. Labor thus protects itself not merely against capital, but against unskilled labor, for the equally effective penalty against the latter is to pronounce the offender a "rat." With labor as well as with capital, might is right. By the principles pertaining to the law of force, those that go to the wall, must go rudely, and forbear complaint.

Qualification, not time, should be the criterion, the employing person being the judge,—as he is responsihle to himself for his dollars,—for when unskillful workers are allowed fair privileges the skilled ones will receive higher pay with greater certainty. Just so far as guilds and trades nnions carry out these principles to the letter, will they be safe or of real henefit to their especial trade.

It is notorious that many a beginner will lay bricks, or make boots, or stick type to more advantage in a few months than another will in from five to ten years. Mechanics of the latter class, the conservative, stagnating and sleepy kind, nndonbtedly *need* the bolstering up of unequal laws, or of arbitrary rules in their favor. But it is precisely that bnsiness which defines Aristocracy in the old world. Therefore labor on such a basis justifies Aristocracy, and is antagonistic and degrading to itself.

The practico of limiting the number of apprentices—brought to our attention by the strike of the iron molders at the Union Foundry on accouut of the employment of an extra apprentice—is a matter in which the trade guilds seem to place themselves in opposition to public interests. Indirectly it is likewise so to their own healthy condition. Why should not ten thousand hoys who may have a fancy in that way, be allowed to learu all the practical knick-knacks of the iron worker's art, in this age of iron? Or why should not every proud-spirited yonng woman be allowed or oveu encouraged to set type in this age of printing,—to possess the power of compelling shiftless printers who deem themselves too poor to marry them, at least to respect them for their virtue and frugslity?

Those who do the talking and voting in the trades unions must see to it that nothing he done by them to retard facilities for the widest acqnisition of skill in the workingman's arts and trades; for therein lies the greatness and prosperity of our indnstrial community. They shonld be aware that excellent schools of the working mechsnical arts have heen called into existence in many places, and are growing in usefulness and popnlarity as they deserve to do. The problem of building np powerful bodies of superior skilled mechanics is one to be solved liberally and in the interest of mechanics themselves; it is of snch great importance to the manufacturing and business interests of the country at large that the true principles touching the nse and employment of skilled labor are very sure to receive attention and to acquire full sway in any event, whether antagonistically to the trades unions or otherwise.

Singular Effect of Electricity on Copper Wire.

Prof. Partz, of Oakland, has placed upon our table a qnantity of insnlated copper wire, which once constituted a relay in a telegraphic office near this city; but which has heen rendered useless, in consequence of the passage through it of a current of atmospheric electricity, which had been conducted into the office by the line wire. The relay had heen hrought to this city to be repaired; but on heing removed from the coil for inspection, it was discovered that a high degree of elasticity had been imparted to the relay, as is supposed, by the electric current. In fact the relay is almost or qnite as elastic as though it had been made of steel instead of copper wire; the wire has moreover heen at the same time hardened or tempered.

As this change must have been brought abont hy the electric current, the fact hecomes one of no little consequence, in view of the practical importance, to which it points of the possihility of hardeuing copper by electricity. The press has frequently recorded the fact of currents of atmospheric electricity having passed through, and more or less injured relays, in various telegraphic offices. Has any effect similar to this ever heen noticed before? Such change may possihly have been produced heretofore without being noticed; In the present instance, it was not observed by tho operators in the office, and was only discovered by the party in this city, to whom it was brought for repairs. The electricity which has heen induced renders the wire unsuitable for again being coiled for a relay.

TREATMENT OF REBELLIOUS SILVER ORES BY AMALGAMATION WITHOUT ROASTING.—Mr. Charles H. Aaron's valuable article on this subject, published in the MINING AND SCIENTIFIC PRESS of April 17th, has attracted snch attention from metallurgists that the author has heen persnaded to enlarge somewhat upon that question, and to issne the entire in pamphlet form. The additional matter, which has not hitherto appeared in the PRESS, comprises: General Considerations; Modification of the Process; Precautions to he Observed; Obstacles; To Know if the Ore can he Worked in this Way, and Notes contaiuing Reasons for the Foregoing. Published by Dewey & Co., price 25 cents.

PROF. WHITNEY, late of the California Geological Survey, together with eight other College Professors of note, and a son of Sam. Bowles, are coming to spend July and August in the Sonth and Middle Parks, for the purpose of making a geological examination of the country, and enjoy themselves in camping out.

SCHLAGENWEIT lectured in English on Friday evening.

Sheffield Scientific School of Yale College.

The oldest and most renowned of our special scientific schools still prospers and takes the lead amongst schools of the kind, now becoming quite popular in this country. It is the starting point of a great number of our best men who are not of the high school order—universal scientists supposed to be perfect in everything,—but men who have won merited reputation in some particular department to which they have devoted themselves.

Such influences upon national character as the Yale Scientific School and other like special institutions, in which thoroughness or nothing is the rule and habit, must be regarded as of the highest importance in their peculiar way, and not any more to be undervalued than the military unity by which the world has now learned to recognize our country quite deferentially as an individual nation.

Readers of new American literature and critiques have noticed the change within a few years, by which it has ceased to be a necessity for an author to be endorsed in England before America will have any conclusive opinion of his merits. It was the want of an enlightened public opinion that made us thin-skinned, sometimes, when we were abused by foreigners. The pitiable and most mortifying spectacle of going to Europe for an opinion regarding ourselves, is a thing of the past. In scientific matters there has been wanting, also, an enlightened public opinion, the effect of which has been curiously different—the existence in every locality of a considerable number of boldly assuming, but secretly little self-respecting persons, who are esteemed above the honest men of science, while our noble and world-renowned scientific men are strangely undervalued, or almost unknown to our worthless "public opinion." The first geologist of our times, certainly amongst the greatest living lights in that science, esteemed in Europe quite as highly as are Lyell, Murchison and Naumann, is Dana, who is not merely an authority, but is the author of the best comprehensive works on Geology and Mineralogy extant in any language, a deep philosopher of the problem of creation, and, as scientist and man, worthy of our profoundest reverence. America, newspaporially, has never been proud of Dana, nor of its other worthy men of the same stamp, who do not "blow;" but that matters little. As in literature, there is already formed in this country a well established democratic public opinion, upon scientific matters, that will take care of itself without the least necessity for fine verdicts or authoritative thunder from any quarter. Such has been the influence of our special scientific schools.

The officers of the Yale School for 1867 were as follows:

President—Rev. Theodore D. Woolsey, D.D., LL.D. Professors—Wm A. Norton, M.A., Civil Engineering and Mathematics; James D. Dana, LL.D., Geology and Mineralogy; Benjamin Silliman, M.D., General Chemistry; Rev. Chester S. Lyman, M.A., Industrial Mechanics and Physics; William D. Whitney, Ph.D., Modern Languages; George J. Brush, M. A., Mineralogy and Metallurgy; Daniel C. Gilman, M.A., Physical Geography; Sam'l W. Johnson, M.A., Analytical and Agricultural Chemistry; William H. Brewer, M.A., Agriculture; Alfred P. Rockwell, M.A., Mining; Daniel C. Eaton, M.A., Botany; Othniel C. Marsh, M.A., Palæontology; Addison E. Verrill, B.S., Zoölogy.

Instructors—Mark Bailey, M.A., Elocution; Louie Bail, Drawing and Designing; John Avery, M.A., Physics, etc.; James B. Stone, C.E., Mathematics; Beverly S. Burton, Ph.B., Chemistry; Charles J. Sheffield, Assaying.

One hundred and twenty-three students were in attendance in 1867.

The *White Pine Evening Telegram* of Shermantown, and the *Elko Independent* are two new papers that come with a flourishing appearance; published respectively by McElwain & Allen and by E. D. Kelley & Co.

A Noted Oratress.

Miss Anna E. Dickinson lately arrived in this city, over the continental railway. She speaks of greatly enjoying the mountain scenery, and was so particularly delighted with the views in the Sierra as to ride from Truckee over the summit on the locomotive, in order to have an open view of nature's grand wonders.

Although yet comparatively young, (in her twenties) Miss Dickinson is undoubtedly the most noted and talented female speaker of the age. She is thoroughly a self-made woman.

It was our fortune to make her acquaintance at her mother's residence in Philadelphia, in 1861, at the time of her maiden appearance before a Philadelphia audience. She had spoken a number of times previously in the country, and up to that date had been strenuously opposed by her widowed mother and other members of the household. But spirited, determined, and successful, her family no longer deemed it prudent to oppose her decided inclination to public speaking. Her labors for the elevation of oppressed humanity in the intervening years, have made her better known to our readers than any newspaper article which we can indite.

As to the true merits of Miss Dickinson's reputation for lecturing, our community will soon have an opportunity of personally judging, she having decided, (after receiving urgent propositions from various quarters), to speak at least a few times in San Francisco and some of the larger places in the State.

Miss Dickinson is the youngest of the family. Her mother, an aged, orthodox Quaker, "still lingers in the lengthened shadows of life," and is one of the frankest, kindest mortals we ever met. Grateful and patient in the infirmities of age, she seems fittingly the waiting guardian of a naturally kind and amiable family.

The Coming Fairs.

The State Agricultural Fair is to commence at Sacramento September 6th, and continue for six days. Twenty thousand dollars in coin will be distributed in premiums. The Fair of the Mechanics' Institute will not open until September 14th, two days after the State Fair closes. Thus there will be no clashing. The mechanics and manufacturers of San Francisco can contribute to both exhibitions without detriment to local or special interests, while those of the interior can arrange for sending their articles hither in turn. The several new railroads completed and in progress toward the two great commercial centers—Sacramento and San Francisco—will offer increased facilities over former years for the transportation of articles for exhibition, and greatly facilitate personal locomotion to and from the places of exhibition. This circumstance, coupled with the fact that extraordinary exertions are being put forth to render these exhibitions more comprehensive and entertaining than they have ever before been, will no doubt largely increase the number of visitors to both the State Fair and the exhibition of the Mechanics' Institute.

The San Joaquin Stock and Implement Association also announces that it will give an exhibition this fall, at which liberal premiums will be offered. The premium list and time for the exhibition will be given to the public in a few days.

The Congressional Committee of Ways and Means, accompanied by their stenographic Secretary, Mr. Smith, of the House official reporters' corps, have been engaged not merely in pleasure excursions, but in hearing testimony, and making visits of inquiry connected with a variety of matter of importance to the revenue and interior departments. Oregon and Alaska will receive their attention. They depart in a few days for a voyage on the Columbia.

The Expedition of the "Summer Cloud,"

In search of a Lost Gold Ledge in Alaska, which sailed Thursday, June 17th, takes with it our imagination, and a lively interest in the haps and mishaps that may befall the "bold adventurers"—seven men, all told, including crew and company, viz., Thomas Haggott, Captain; Jonas W. Bowman, George Tew, Christopher Ford, Hugh Gallagher, John Hannah, and Joaquin Torres.

Their "ship," an unornamented schooner, might easily be mistaken, if not the crew as well, for one of those old Spanish visions of exploration belonging to another age, when Spanish blood was free; and the party might be imagined to be led, perhaps, by another Velasquez or Cortez,—should we take our glance of the idle craft as it makes long, and slow-advancing tacks against the North wind off Point au Reyes and Cape Mendocino, or follow it like the gulls and see how the men will toss overboard the anchor in Nootka Sound, or some yet unnamed Alaskan bay with a bosom of the ocean's blue, and lining of wholesome forest of the emerald's green, bounded with lofty ribs of glacial snow.

The origin of the expedition is as follows: Several years ago a few men were sent ashore from a vessel for fresh water at some out of the way place, several hundred miles north of Sitka. In the stream from which they obtained their supply, they found a quantity of quartz, of which they brought away a few samples. When these specimens were assayed at the Sandwich Islands and in this city, they were found to be exceedingly rich in gold. Several unsuccessful voyages have already been made to re-discover this El Dorado, and the party are in possession of additional information.

The Summer Cloud cleared for a fishing and hunting excursion. She was fully supplied with an outfit of stores, mining tools, fishing tackle, and such articles of merchandise as are generally required for trading with the natives for furs. Whether they discover gold or not, the adventurers intend to make a paying voyage of it, by fishing and trading. Unless captured by the treacherous Indians, a risk not small on those aboriginal shores, the expedition will return in about four months.

Death of Justus Adelberg.—This accomplished mining engineer, late member of the firm of Adelberg & Raymond, died at Hoboken, on June 5th, of disease incited nine years ago by the inhaling of fumes of mercury, in some metallurgical experiments. He was born in Hesse Cassel; was a student and favorite of Bunsen's at Marburg; at the age of 22 conducted a large government chemical manufactory at Hanover, and in 1848 joined the liberals and was of course proscribed and obliged to emigrate. He lived five years in England, came to this country in 1854, at the age of thirty, visited our manufacturing centers, and soon after married and became identified with American mining industries, in which he has been an instrument of power and usefulness.

Report on the Precious Metals.—The report on the precious metal, at the Paris Exposition, by Prof. W. P. Blake, has been issued, both at the Congressional Printing Office, and by Putnam & Co., of New York. An invoice of the private edition of the same, neatly bound in cloth, has been received by Bancroft & Co., of this city. As the House of Representatives have not ordered any of these reports for their use, the Government edition can be had only on application to some member of the Senate.

Valuable data from the Nevada argentiferous limestone districts, will be found in the communication of "Las Minas," on the second page of this issue.

Mechanics' Institute--Quarterly Meeting.

The regular quarterly meeting of the Mechanics' Institute was held on Thursday evening, at their rooms on Sutter street, President Hallidie in the chair. The regular quarterly report was read, from which it appeared that the Institute has now 1,254 members, with 12,646 books in the library—an increase of 216 since last report. The receipts for the past quarter have been $4,287, against an expenditure of $3,936. An expenditure of $3,000 was authorized by the Institute for certain needed improvements and alterations in the present building, by which it is said the income therefrom may be increased $100 per month.

The President, Mr. Hallidie, made a most satisfactory verbal report upon the progress which was being made towards the coming Fair.

Polytechnic Branch.

Mr. Herrick reported a proposition for the formation of a Polytechnic Branch of the Institute, which was favorably received by the members present, and the matter referred to a special committee, consisting of W. B. Ewer, Irving M. Scott, William F. Herrick, and David Farquharson. The design of this organization is to procure the preparation of essays on various subjects of a useful and practical character, to be read at the monthly meetings of the Institute, or at such other times as may be deemed expedient. This organization will be effected and carried on upon a plan similar to the Polytechnic Branch of the American Institute of New York, and if properly conducted, cannot fail to add much to the interest and value of the Institute. The first paper will be read at the next monthly meeting.

Roach's Quicksilver Furnace.

This furnace for extracting quicksilver from its ores, which has been secured by patents through this office, dated in April and July, 1866, and which has already been noticed in this paper, was put up some months since on a mine at Pecachoes, Monterey county. About ninety tons of ore were put through it, with a given result. Subsequently, as we are informed, another lot of the same class of ore was put through an ordinary brick furnace, with a less yield, showing a marked advantage in cost and yield by the use of Roach's patent. It has long been apparent that the present mode of treating quicksilver ores is cumbersome, expensive, and lacks thoroughness. We should be pleased to see the invention subjected to a thorough and continued trial. Mr. Coalt, who was formerly associated with Mr. Roach in the proprietorship of this furnace, has sold his interest to Mr. R., who is now sole proprietor.

Pioneer Fuse Factory.—Gases evolved from the drying of the varnish (it is supposed) on some fuse left unattended in the varnish room of the Pioneer Fuse Factory at the Potrero ignited that combustible material on Tuesday; and the entire works were destroyed by fire. Fortunately there was ordered some time ago a lot of new machinery which has already arrived. It will take the place of that destroyed, and the factory will be on a producing footing again in the remarkably short time that burned-out San Francisco manufactories are wont to be reconstructed, under such circumstances. One is almost inclined to justify a little of accidental burning down or other misfortune, as efficient and wholesale if not very profitable advertising to those who ought to be patrons of the manufactories in question. Lose $25,000, without insurance.

The cotton crop, from all accounts, will reach or closely approach three million bales. The anticipations of injury to the crop have not been realized; and no trouble is now feared from lack of laborers, as the negroes have got their fill of politics, and are now ready to go to work.

Professional Cards.

Notice To Mining Companies.

The undersigned offers his services to the mining public. Having devoted several years to the study of mining and metallurgy in some of the best schools and works of Europe and being acquainted with the metallurgical treatment of ores as practiced on this coast, he is confident of his ability to render valuable aid to parties employing him.

CHAS. C. RUEGER.

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SAFETY APPLIANCES.—The eccentric toothed safety catch, for mining cages held in place by guides,—to arrest fall if the rope breaks,—is in use nt the Belcher, Crown Point, Chollar-Potosi, and other mines on the Comstock lode. At the trial of a new one recently, the maker, William Bray, the Belcher mine blacksmith, and Robert Bross, foreman, got in, while another man cut the rope. The cage fell 1¼ inch before it caught; would otherwise havo fallon 850 feet. Safety gates, to prevent cars from being rnn into the shaft carelessly while the cage is not there, have also been applied at tho Belcher mine by Daniel Grant, the carpenter. A stout spring eam at each side of the shaft keeps the gates closed; but the cage on coming up presses against the cams, nnd these, by means of connecting-rods, push tho gates open.

BLASTING.—Vau Bokkelen and Smith, in the courso of some blasting experiments in the Sierra Nevada mine, sunk a hole 12 to 15 feet, and exploded in it without tamping a light charge of giant powder, to enlarge the cavity; then poured in a keg of common powder, which wns tamped with sand, nnd set off with unexpectedly favorable results. * * A little electric machine to eet off blasts has been tried on Telegraph Hill. It works admirably when properly understood; and therein lies the solo hindranco to the general employment of electricity in the place of the slow nnd unreliable fuse. "Simplicity in the apparatus and a little schooling, shonld soon supersede fuse altogether, in the gravel mines especially. * * Tin canisters containing 75 to 175 ponnds of blasting powder, a total of 1,000 pounds, were attached to the surface of Blossom Rock under from six to twenty-four feet of water, and set off by electricity—and found by Lieut. Hcuer to loosen 49¼ cubic yards of rock. Nevertheless it is deemed cheaper to drill, and insert the cartridge in the usual manner.

Adams' Hydraulic Wheel.

One of these wheels, twenty-two inches in diameter, is in operation in the Union Mining Company's claim at Port Wine, Sierra County, says the *Messenger*. The water is taken from a reservoir near the surface, and conveyed in a 7-inch pipe dowu a shaft one hundred and ten feet in depth, thence along the side of the tunnel 2,000 feet to the wheel. The wheel has sliding steel buckets two inches square. About ten inches of the lower circumference of the wheel is enclosed in n tight-fitting jacket, the water acting on the buckets for that space only. When the water has ceased to act upon a bucket it is thrown backward into the wheel by small cams attached to it, and held iu that position until the wheel has made a revolution, when the bucket is again thrown forward to be acted upon by the water. It is adapted to great hights and scarcity of water.

ITEMS.—Santa Cruz is replacing its wooden water pipes with wrought iron ones, joined by cast iron couplings; Messrs. Authony & Burrows doing the work.... Wharf building in San Francisco bay is largely done by particular firms as a specialty. J. A. Fulton has contracts, amongst which are: the wharf for T. L. Moyer, Santa Cruz Island, 400x24 feet, for $7,500; one for Ben. Holladay, at Monterey; the Vallejo flouring mill foundation, building by Pierson & Starr, for $15,000; and one for the Gas Company, foot of Second street, 130 feet long, for $5,200....The The present Sacrameuto and Yolo bridge is 900 feet long, cost $50,000, and rests on seven substantial pile piers. The Americau river Pacific Railroad bridge, a superior "How," is 500 feet long, rests on five pile piers truss, and cost $50,000, iuclnding half a mile of trestle work. The proposed Rincon Hill bridge in San Francisco is to be eighty feet long, and will cost $97,000—public money.

PUBLIC SURVEYS.—Congress has appropriated for public surveys the ensuing year in California, $50,000; in Arizona, $5,000; and limited the rates por mile for ruuning standards to $15, for township and section lines, to $10 per mile. The Commissioner directs the Surveyor General to expend a reasonable share of the appropriation in California in surveying lands along the route of the Central Pacific Railroad, in mineral regions, and in other localities where the public interest may be snbserved. In Nevada, along the Pacifio Railroad (Humboldt and Landor counties) 230,400 acres, watered by the Humboldt River and now easily accessible, have recently been reported by the Virginia City office as snrveyed. In Oregon there is a tide of emigration flowing southwards, and the *Sentinel* calls for the survey of the Goose Lake country.

School land warrants, Cherokee scrip and other papers giving to holders the preference in a certain order well understood, follow up the surveys wherever there is a valuable timber or other good land; so that the price received by the government for desirable timbered land, for example, in the Sierra Nevada, is not less than $5 per nere.

IMPROVISED DITCHING MACHINE.—Dr. Parsons, of Denver, Col., uses for ditching a V-shaped wooden frame, twelve feet long and four feet wide at the rear end, pointed with sheet iron. After the ditch is plowed, a team of four yoke of oxen is attached, and the machine is hitched so ns to be drawn at an nngle of forty-five degrees; the lower side keeping in the bottom of the ditch and the other crowding out the dirt so as to form an even and regular bank. One round will open a ditch about fifteen inches deep aud seven feet wide. A team and three men will complete two miles of ditching per day.

PAPER PROTRACTOR.—An English engineer, J. Perrins, recommends to surveyors the use of a lithographed paper protractor, which not only costs less than brass, but can be used with greater accuracy and expedition. The common brass protractor is seven to ten iuches in diameter; this is fifteen. Iustead of pricking the bearings on the plan, both injuring and soiling it, on this any bearing may be seen and plotted at once. A protractor of this kind should lie in everybody's note-book.

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For **Dysentery** or **Diarrhœa,** but one mild dose is generally required.

For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins,** they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.

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An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Heace it is often advaatageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on tho digestive apparatus.

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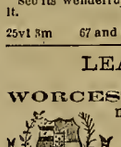

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This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of Intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the veinous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases wh re a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be used, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The mansion of that precious water is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constipation and Tenacious Vomiting; Weakness of certain Organs; the Indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhodes; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Scalds its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's
Claims and Mill,
Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continuel running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are se situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered as far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 300 feet. A force of thirteen men only are required to keep both mill and mine running regularly.

On the surface and first level for a distance of 500 feet from these veins, the ground or surface was milled by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which factgoes to prove that a heavy deposit of ore was contained in the croppings of these veins, which, by all former and present theories of deep mine workings, came from below, indicating that when sunk upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.

This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.

The last level, 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $4 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.

Now I propose to sell two thirds of this valuable property for $16,000, cash; and any party who desires to purchase a property of this kind—which theory has proven that irregular depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.

For any further particulars, direct by letter to Wm Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.
21v18tfqr WM. BOSWORTH.

A Long Desired Article
FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using
CAMILLE CHAMPOO,
which not only does away with the dandruff, but it cleans the head, strengthens and beautifies the hair, preserves the color, and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERTON & LUELLING, 724 Mission street, San Francisco, Cal.
HEATHFIELD & BOGLE, Wholesale Druggists, 206 and 208 Battery street, San Francisco, sole Agents for the Pacific Coast. 24v18-3m

[Continued from First Page.]

being brongbt on, in whicb less feed must be carried, the rake is too great for the feed, and tbe saw will descend one-fourth, and sometimes one-half the stroke before it begins to cut, thns losing that proportion of the cut in each stroke. To obviate this, Anderson's Upper Muley is provided with the long movable slides, F, at the bottom of which are attacbed tbe saw guides, D, which can be raieed or lowered by the hand wheel, chaft and pinion, E, working in the rack on the slides, F.

Programmes of Lectures at the Ecole des Mines.

The *Annales des Mines* publisbes, in 170 octavo pages, the ontline-headinge of the courses of lectnres delivered by the several instructors in the National Mining Scbool of France, a *free* institution of the most ample proportions, and in architecturel grandeur and impressiveness not unworthy of the vast importance, the colosseal moneyed interests attaching to the mineral developments of a great and independent nation.

The Official Director of its studies is M. Gruner, formerly the Principal of the School of Mines at St. Etienne, fifty miles southwest of Lyone, and holding the eame relative position in the coal basin of the Gier as Pottsville in Schnylkill County. Elie de Beaumont, the compeer of Murchison, Lyell and Von Buch, is Professor of Geology; Daubree, of Mineralogy; Callon, of Mining; Couche, of Railroad Construction; Dupnnt, of Mining Law; Delesse, of Drainage; Bayle, of Palæontology. The programmes of the preparatory courses embrace: a. Course of analysis, mechanics, spherical trigonometry. b. Course of descriptive geometry and stereotomy. c. Physics. d. General chemistry. That of special courses: a. Exploitation of mines. b. Metallurgy. c. Docimasy (assaying). d. Mineralogy. e. Palæontology. f. Geology. g. Exploitation of railroads and construction. h. Agriculture, drainage, and irrigation. i. Administrative law, mining legislation and industrial economy.

Combinations in Labor and Capital.

The coal regions of Pennsylvania are prolific of etrikes, the organization of labor including the "whipping in," as moneyed combinations, "corners" and "rings," are the organizations of capital. An artificial check is often songht to be put upon over production or glutting of the market, by combinatione amongst capitalists or merchants; but fortnnately, or unfortunately (?) there is no penalty for the boltere, and the laws of demand and supply do, nevertheless, reign supreme, whether it be labor or capital tbat combines. Certain it is that neither can ever afford to ruu conuter to the interests of the majority, and of the public, for the attempt is sooner or later sure to be paid for by a penalty; and herein lies the difference between intelligent management in organization, and the etupidity "that goeth before a fall."

Hungerford's Concentrator for Tin Ore.

A serious mistake in the figures of Capt. Kelly'e statement on this subject in our last number, was made by our informant, by which 60 per cent. was made to read "6 per ceut."—the amount of metallic tin obtained out nf the Hungerford concentrated ore at Storm & Dwyer's on Tuesday of last week. Capt. Kelly's statement contained facts of considerable importance, from which can he formed some judgment of the cnmparative merits of the Hungerford machine for tin—the most troublesnme ore to concentrate without loss. Out of 3,200 pounds washed, 1,315 pounds were saved—in other words, 41 per cent.; and the resulting concentrated matter was 60 per cent. metal, or within 18 per cent. of the pure oxide of tin, which is 78 per cent. metal, and 22 per cent. oxygen.

CONTINENTAL Life Insurance Compaay, 302 Montgomery street, cnrner of Piae. *

Resources & Developments

FRUIT FOR THE EAST.—Returns received from California fruit eent East hy rail are thus far highly favorable. Tbe fruit appears to stand the trip well, and meets a ready sale at remunerative prices. Of course none but early fruit is sent, which, anticipating tbat of Eastern growth, can be sold at a profit. The latest shipment of which we have heard was a lot of watermelone eent from Sacramento to New York. Contrary to the predictions of most people, the shipment of fruit to the East promises to become a very important business for California. The Central Pacific Railroad Company are bnilding no less than fifty cars to accommodate this business, four of which are already finished. Special, funnel air-pump ventilators are attached to these cars, to insure their best possible condition for fruit transportation.

WOOD BY RAIL.—The question of fnel for the snpply of our growing interior towns is already becoming a matter of serious importance in view of the rapidly diminishing supply of that indispensable article. Virginia City has met tbe qnestion by the construction, for that and other purposes, of a railroad to the Truckee. Other large interior towns will soon have to adopt similar means to obtain their supply at reasonahle rates. The numerous stationary and locomotive engines on this coast, which are already numbered by thousands and rapidly increasing, with all other multifarious usee fnr lumber, are making sad havoc with our forests, which, in this dry climate, are not so readily renewed as tbey are in those countries more favored with rain. Some of the more important points in Colorado are also beginning to feel alarmed at the increasing price of fuel, and are considering the expediency of constrncting railroads to supply their mills, furnaces and private dwellings, and at the same time afford other facilities for transportation, which are more or less needed.

NEW GUANO ISLAND—BAD POLICY.—Some San Francisco capitalists who own a receutly-discovered guano island about 700 miles west of the Sandwich Islands, and who naturally wish to dispose of it to other parties who can immediately turn it to profitable account, are about to sell the same to eome English capitalists. This is bad policy. The time will soon arrive when California will need all the guano within her ready reach to recuperate her land from the exhaustive plan of cultivation now pursued here. Indecd, the time has already arrived when we should commence its extensive use. In Europe, where the principles of hushandry are better understood, or at least better appreciated, tbe value of snch discoveries are fully recognized; hence the movement for the sale referred to. We who are wasting onr rich inheritance would do better to appear as buyers instead of sellers of such valnable deposits—deposits more precious than even the gold that glitters in our mountain sands. By and by, perhaps when it is ton late, we shall become wiser.

AGRICULTURAL RESOURCES.—The westward progress of our agricultural interests affords a most suggestive fact for the contemplation of Californians. Statistics show that tbe territory between the Mississippi and the Pacific, which in 1859 produced but 25,000,000 hushels of wheat, in 1868 yielded 65,000,000. Ten years ago that region yielded but one-seventh of the total product of tbe country; now it yields one-third of the aggregate. In twenty years, California and the States on the immediate eastern slope of the Rocky Mountains will furnisb the great hulk of the cereals for a population of nearly 60,000,000 within our own territory; to say nothing of the millions which will then be dwelling in the islands of the Pacific, on the eastern hordere of Asia, and in Europe, who will look to us for more or less of their breadstuffs.

Company Transactions.

New Incorporations.

Tbe following new companies have been incorporated:

ACCACIA G. & S. M. Co.—White Pine, Nev. June 28th. Capital stock, $720,000; shares, $100 each. Trustees: B. F. Pendleton, S. P. Jewell and R. T. Ward.

MIDIAS M. Co.—White Pine, Nev. Capital stock, $200,000, shares, $20 eacb. Trustees: M. S. Cobb, Paul Sneiler and Fred. Sneiler.

HERCULES G. & S. M. Co.—White Pine, Nev. June 29th. Capital stock, $1,400,000; shares, $100 each. Trustees: F. Vassault, W. J. Maynard, T. G. Durning, W. R. Leveredge and S. H. Brown.

FRESNO QUICKSILVER M. Co.—Fresno County, Cal. July 1st. Capital stock, $4,800,000; shares, $100 each. Trustees: Wm. H. Sharp, A. G. Chauché, Charles Friedberg, L. Castro and E. Pascal.

Meetings, Elections, Etc.

WEST POINT SILVER M. Co.—White Pine, Nev. June 25th. President, G. F. Bragg; Vice President, J. C. Wilmerding; Secretary, Ira Ayres, Jr.; Superintendent, Robert Barton.

NEVADA SMELTING AND REDUCTION Co. June 28th. President, Charles H. Gordon; Vice President, W. Applegarth; Treasurer, Frank Drake; Secretary, David Mitchell.

STATE UNIVERSITY H. A.—June 28th. A. Stebbins (President), V. Smitb (Vice President), Geo. Tait (Treasurer), J. Stratton (Secretary), J. C. De Voy, L. Langstadter and L. Walker.

CITY PARK H. A.—June 29th. Trnstees: I. M. Choguski, H. W. Newbaum, L. Schwartz, D. P. Frank, and L. Feder.

IMPERIAL G. & S. M. Co.—June 29th. Trustees: A. K. P. Harmon, Thomas Sunderland, William Sharon, A. Hayward. J. D. Fry, Thomas Bell and Thomas Sherwood. Superintendent, R. N. Graves.

SILVER SPROUT M. Co.—June 29th. Trnstees: Nathaniel Page (President), E. B. Mott, Jr., A. Wingard, W. N. Wade and A. B. Panl. T. B. Wingard, Secretary and Treasurer.

SILVER VAULT M. Co.—Geo. O. Ecker (President), J. Scott (Vice President), J. L. Homer, J. B. Houghton and J. W. Shaeffer. Joseph L. King, Secretary and Treasurer; and E. W. Herrin, Superintendent.

FRENCH AND MARLBOROUGH M. Cos.—July 1st. Trustees, J. Pinet, E. Thomas, L. Franconi, A. G. Chauché and A. D. Grimwood.

ADDRESS WANTED.—We are desirous of communicating with Allen Oliver, lately of Jamestown, Tuolumne County, California. tf

RETURNED.—Dr J. H. Paine, Dentist, Wadsworth House, No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enamoled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

CO-OPERATIVE UNION STORE.—This is becoming one of the most useful Institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco. 21v18-4w

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named emtnent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco. 21v18 3m

Cholera—How to Cure It.—At the commencement of the diarrhœa, which always precedes an attack of the cholera, take a teaspoonful of the Pain Killer in sugar and water (hot if convenient), and then bathe freely the stomach and bow ls with the Pain Killer clear. Should the diarrhœa or cramps continue, repeat the dose every fifteen or twenty minutes till the patient is relieved. In extreme cases two or more teaspoonfuls may be given at a dose. The Pain Killer, as an internal remedy, has no equal. In cases of Summer Complaint, Dyspepsia, Dysentery, Asthma, it cures in one night by taking it internally, and bathing with it freely. Its action is like magic when externally applied to Bad Sores, Burns, Scalds, and Sprains. For Toothache, don't fail to try it. In short it is a *Pain Killer.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents. jy1m

New Advertisements.

A PAMPHLET,

JUST PUBLISHED ON THE

TREATMENT OF REBELLIOUS

SILVER ORES

—BY—

AMALGAMATION WITHOUT ROASTING

BY CHAS. H. AARON,

Assayer and Metallurgical Chemist.

This Pamphlet contains 8 pages of concisely written matter, by a practical working Metallurgist.

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Publishers and Patent Agents, Mining and Scientific Press, Office, 414 Clay street.

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1v19tf

R. G. ROWLEY,

ATTORNEY AND COUNSELOR AT LAW,

618 Merchant street,

Between Monigomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

THE BEST WEEKLY IN AMERICA.

MOORE'S RURAL NEW YORKER,

The largest, best and cheapest RURAL, LITERARY and FAMILY WEEKLY, in the world, enters upon a new Half Volume July 3, and hence *Now is the Time to Subscribe!* Sixteen five-column pages. Employs the best talent. Finely and profusely illustrated. For example, see the splendid full page group of GEN. GRANT'S FAMOUS HORSES, in No. for July 3d. Adapted to the whole country. Combines Ability, Variety, Taste, Spirit, Progress and Usefulness. Circulates all over the Continent, and now reaches the Pacific States in a week from date. Is not only a superior Literary and Family Paper but treats fully and ably upon Rural and Domestic affairs, Science, Art, etc. Try it, and you will find that "Moore's Rural" is (as both Press and People say), the Best Weekly in America. Only $3 a year—$1.50 for half. Ask your P. M., or address D. D. T. MOORE,
1v19 2t 41 Park Row, New York.

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LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 17th and 30th of each month that has 30 days.

On the 10th, 18th and 30th of each month that has 31 days.

When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding; when the 17th falls on Sunday, they will leave on the Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departure of the 17th or 18th is expected to connect with the French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America. Through tickets can be obtained.

The following Steamships will be dispatched on dates as given below:

July 9—GOLDEN CITY.....Capt. Wm. F. Lapidge,
Connecting with ALASKA, Capt. Gray.
July 17—MONTANA.....Capt. E. S. Farnsworth,
Connecting with HENRY CHAUNCEY, Capt. Connor.
July 30—COLORADO.....Capt. Wm. H. Parker,
Connecting with ARIZONA, Capt. Maury.

Passengers berthed through. Baggage checked through. One hundred pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets to Liverpool by the "Inman" and "National" Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco, where may also be obtained orders for passage from Liverpool or Southampton to San Francisco, either via New York or St. Thomas—if desired an amount of £10 to £20 will be advanced with the above orders. Holders of orders will be required to identify themselves to the Agents in England.

For Merchandise and Freight to New York and Way Ports, Comosnpy's Form of Bill Lading only used.

No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.

The Steamship GREAT REPUBLIC, Capt. Cavarly, will be dispatched for YOKOHAMA and HONGKONG on SATURDAY, July 3d, 1869, at noon connecting at YOKOHAMA with the steamer NEW YORK for SHANGHAI. Shippers of freight to China or Japan are requested to mark on each package its destination.

For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.

NEW INVENTIONS.

A New Car Brake.

Recent experiments on the Erie Railroad have demonstrated the utility of a newly applied power for stopping trains, which secures highly satisfactory results as a preventive of accidents.

The compressed air brake places the entire train under the sole control of the engineer, who is able to bring his train to a full stop within a distance of six hundred feet while going at the rate of twenty-five miles an hour.

The element of power is simply pure air, which at the will of the engineer is forced into the cylinders, forming a "cushion," which becomes harder with each revolution, and the retarding force is consequently rapidly multiplied. At the same time, while the power of the engine is exerted to oppose the motion of the train, the air is forced into a special reservoir, and the power applied directly to all the brakes throughout the train, by means of a strong india-rubber tube, passing under the cars and fitted with double valves at the couplings, so that any number of the cars may be detached and switched off without disarranging the air apparatus of the cars remaining attached to the locomotive.

The invention above alluded to is no doubt an important one, but it does not appear to be as effective for stopping the train as Loughridge's self-acting car brake, by which trains traveling at the rate of thirty miles per hour have frequently been stopped within 350 feet, when the brakes are shod with cast iron, and within 250 feet when wooden shoes are used. Loughridge's brake also presents another feature not accomplished by any other brake, viz., the facility with which it can be applied, not only by the engineer, but by any passenger in any car of the train, and is so arranged as to allow the applying of every brake in the train or of each car, independent of all the rest.

AN ACTIVE INVENTOR.—Joseph Dixon of Jersey City, whose death is chronicled, at the age of seventy-one, was the inventor of a machine to cut files; of the photo-lithographic process; of methods of printing in colors, making collodion, and grinding lenses; of the anti-friction metal that has been for a great many years known as "Babbit Metal;" of the process of steel melting in use in this country, etc. He learned the printer's trade, afterward that of wood engraving, then lithography, and afterward studied medicine, and in that connection became interested in chemistry, becoming finally one of the most accomplished and comprehensive chemists in the country. He was a thorough optician, and had scarcely an equal in his knowledge of photography.

IMPROVED LOCOMOTIVE SMOKE STACK.—Mr. J. W. Bowker, of Sacramento, a veteran engineer on the Pacific Railroad, has invented an improved smoke stack for locomotives and other engines, which, according to the Sacramento *Reporter*, has been thoroughly tested and found eminently practicable. It was recently attached to a locomotive of the C. P. R. R., which made a trip to Rocklin, and on which occasion, according to the *Reporter*, three pairs of keen eyes failed either to see one spark escape or catch even a cinder in either eye. It is also said to be a great economizer of fuel. A patent for the invention has been applied for through the MINING AND SCIENTIFIC PRESS PATENT AGENCY.

NEW STAMP GUIDE.—Mr. Chas. A. H. Rice, of Gilpin County, Colorado, has invented what he calls a "universal stamp guide," consisting of a cast iron plate with three movable wooden slides which present their concave ends to the stem of the stamp. They are so arranged that they can be moved up, as they wear away and held to their place by a set screw. When the wood is worn out, it can readily be replaced, and being of wood, causes little or no wear upon the stems. The Colorado City *Register*, of June 10th, says that some 800 of these guides had already been bargained for, for use in that vicinity.

The Australian Colonies.

EDS. PRESS:—Of all these Colonies, VICTORIA is, I believe, the smallest, Tasmania only excepted; but it is by far the most important. Its population is larger, richer and more enterprising than any other. We have one main line of railway through the center of the Colony, from the seaboard to its northern boundary—from Melbourne to Echuca. There is now about to be constructed another main line from Melbourne to our northeastern boundary, the first line being 160 miles long, and the latter will be about 180.

Our principal products are gold and wool, although of late years a great deal of land has been used to produce grain, and now the vine is being cultivated to some extent. Factories also are beginning to spring up, and I am happy to say that it appears to me that a very prosperous future lies before us.

You will see by the list of Patents that there is a large proportion of them which have reference to the gold-producing interest, as there is always a field for such inventions here.

Inventions of agricultural implements (we want now a good sheep-shearing machine), methods for preserving meat, making wine, etc., would have a fair chance here.

NEW SOUTH WALES is next in importance to this Colony; but the people are slower and more prejudiced as a rule. They have some good gold fields, but the aggregate is not to be compared with Victoria. A large proportion of the Colony is used for grazing purposes. They have large coal fields, but grow very little corn.

NEW ZEALAND is next in importance. Their principal products are gold and grain (although not a great deal of the latter).

SOUTH AUSTRALIA follows, and is a very large grain-producing Colony, with some first-rate copper mines. They are also the largest wine producers.

QUEENSLAND is a young Colony. So far it has been used principally for grazing purposes, although gold has been found in several places; but the place is new as yet.

TASMANIA is famous, I believe, only for its convict establishment and its healthy climate.

To Rejected Applicants for Patents.

We believe that under the new administration of Commissioner Fisher many new patents will be granted on applications heretofore rejected upon untenable grounds, by less sound and impartial judges than those now in office. Thus, while the chances are lessened for obtaining patents for meritless inventions, the opportunity is increased for applicants to get patents on rejected cases justly entitled to an issue. Inventors on this coast have every facility through our Agency for obtaining just decisions on their inventions, past and present.

DYSPEPTICS, CHOOSE FOR YOURSELVES.—Victims of indigestion, it is for you to say whether you will continue to endure the living death of which you complain, or awake to a new life of health, vigor and enjoyment. The PLANTATION BITTERS will cure you. It is not more certain that darkness will be dissipated by to-morrow's dawn than that the regular use of this potent medicated stimulant will relieve your every pang, and restore your appetite, cheerfulness and strength. Will you remain in the "Slough of Despond," weak, wretched, a prey to indescribable torments, or will you come out of it and join the throng that have already conquered the disorder from which you suffer, with this glorious vegetable antidote? The transition is easy—the means agreeable—the result beyond all peradventure. ***

MAHOGANY LOGS, just received from Costa Rica, can be furnished at low rates by Hohhs, Gilmore & Co., Market street, between Main and Beale streets. ***

THE RIGHT STAMP!—One of our wide-awake California inventors (who has already received two patents through this office) evinces a true winning spirit in the following note:

SAN JOSE, Cal., June 29, 1869.

MESSRS. DEWEY & CO:—A few days ago I received your letter apprising me of the rejection of my case, etc. Well, under the circumstances, I will just say, "*Let 'er rip!*" and I will remember the indefatigable Zack. Taylor's advice to his soldiers—"Pick your flint and try it again." I will have to try and get even on something else. I am satisfied you have done your duty as agents. Yours, J. F. C.

MECHANICAL AND ARCHITECTURAL
Drawing School
— FOR —
APPRENTICES.

MR. FREDERICK HELLERT,

An experienced Draughtsman and Teacher, has opened an Evening School at No. 414 CLAY STREET (same entrance as the Mining and Scientific Press office), where he is giving thorough instructions in DRAWING to apprentices who are inclined to self-improvement. His terms are moderate and within reach of the humblest apprentice; and we are pleased to say that the enterprise is meeting with success.

1v18.tf

Quarterly and Monthly Editions.

At the end of each quarter a large number of our weekly issues for the preceding three months are bound up in book form, which, by special arrangement, are placed upon the ferry boats and various steamers leaving San Francisco and other ports on the Pacific Coast, for free reading by the intelligent traveling public. The Quarterlies are also to be found in the principal libraries, depots, hotels, and free reading rooms of the Coast.

This, in addition to our Monthly Series and large weekly circulation, makes the PRESS the BEST and CHEAPEST general advertising medium throughout the Pacific Coast. The value of advertising in our columns, however, is best determined by those who have tried it, and we respectfully refer to our patrons in that line. No paper in the United States can boast a better class, and no weekly paper on the Pacific Coast receives as large a sum for regular advertising, or has more constant or long-continued customers.

LOOK to your eyes—If you will see C. Muller, 205 Montgomery street, you will doubtless be able to see better. *

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Mining and Scientific Press.

ESTABLISHED..... .....MAY, 1860

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The inventors of the Pacific Coast, of all others, should be careful to patronize only well known RESPONSIBLE agents.

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Publishers and Patent Agents, No. 414 Clay street, below Sansome, San Francisco.

New Mining Advertisements.

Daniel Webster Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco, Cal. jy3

I. X. L. Gold and Silver Mining Company.—Location of Mine: Silver Mountain District, Alpine County, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the tenth day of May, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. shares.	Amount.
Evans, Comer	335	90	$135 00
Bridges, Mary C.	360	12½	18 75
Senter, Riley	45	10	15 00
Clark, T B	375	10	15 00
Clark, T B	386	2 ½	33 75
Long, E M	354	10	15 00
Phillips, Chas C	60	43½	6 55
Vega, F de la	154	11	1e 50
Jardin, Henry	158	5	7 50
Jardin, Henry	304	3	4 50
Jardin, Henry	330	12½	18 75
Jardin, Henry	331	5	7 50
Jardin, Henry	334	15	22 50
Hepburn, James	116	5	7 50
Hepburn, James	158	5	7 50
Hopburn, James	217	10	15 00
Blanding, Louis	237	28	42 00
Cairns, John	249	70	105 00
Bolts, John	256	8	12 00
Bolts, John	381	10	15 00
Hatch, F S	312	8	12 00
Love, R K	275	5	7 50
Love, R K	332	5	7 50
Cutter, R S	366	3½	5 25
Cutler, R S	384	10	15 00
Long, M	385	22 7-16	33 60
Healy, E D	389	10	15 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth (10th) day of May, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Olney & Co., auctioneers, No. 428 Montgomery street, San Francisco, on Wednesday, the fourteenth day of July, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. CROWNINSHIELD, Secretary.
Office, Pioneer Hall, Montgomery street, up stairs, San Francisco. jy5

San Fernando Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of the Stockholders of the San Fernando Tunnel and Silver Mining Company will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 3 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner Montgomery and California streets.
San Francisco, July 1, 1869. jy3

Sedgley Tunnel and Silver Mining Company. White Pine Mining District, State of Nevada.

The first Annual Meeting of the Stockholders of the Stockholders of the Sedgley Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 1 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner of Montgomery and California streets.
San Francisco, July 1, 1869. jy3

White Cloud Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of Stockholders of the White Cloud Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 2 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner of Montgomery and California streets.
San Francisco, July 1, 1869. jy3

Mining Notices--Continued.

Gold Hill Tunneling Gold and Silver Mining Company.—Location: Gold Hill, Storey County, State of Nevada.

The Fifth Annual Meeting of the Stockholders of the above named Company, for the election of Trustees to serve for the ensuing year, will be held on SATURDAY, the seventeenth day of July, 1869, at 3½ o'clock P. M., at their office, 414 California street, San Francisco, Cal.

R. WEGENER, Secretary.
Office, 414 California street, San Francisco. je19

Evening Star, No. 1, Silver Mining Company Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of June, 1869, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Saturday, the thirty-first day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-first day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.
Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. je28

Notice.—The Annual Meeting of Stockholders of the "Kewance Silver Mining Company," for the election of Trustees and the transaction of any other important business, will be held at the office of the Company, No. 211 California street, on SATURDAY, July 10th, 1869, at 3 o'clock P. M.

EDWARD BARRY, Secretary.
June 10th, 1869. je12

North Star Gold Mining Company.—Location of Works: Grass Valley, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of June, 1869, an assessment (No. 1) of twenty dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 10 second floor of No. 402 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on Friday, the ninth day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the thirtieth (30th) day of July, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. W. COLBURN, Secretary.
Office, room No. 10 second floor of No. 402 Montgomery street, San Francisco jun5

Silver Wave Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventh day of June, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the eighth day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twenty-eighth day of July, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, No. 418 California street, San Francisco. je12

Willimantic Silver Mining Company. Location of works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of May, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the nineteenth day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the tenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco. je26

Engraved to Order.—Persons who desire to illustrate their individual establishments or business, should give us their orders for Engraving and Printing, and we will guarantee good work and reasonable prices.

DEWEY & CO.,
Patent Agents, Publishers and Job Printers, 505 Clay st.

[Written for the Mining and Scientific Press.

Perpetual Motion.

EDITORS PRESS:—Though it is hardly to be supposed that any reader of the PRESS is spending his energy in search of this *ignis fatuus*, yet he may some time meet with one who is still in pursuit of it. Each may have his own way of answering such persons, but can seldom convince or reclaim the really earnest.

I will relate an anecdote of one of them. He was an old man, a good wheelwright, and had spent so much time on this power of motion, that his business left him, his family were in distress, and himself thought to be crazy. When somewhat recovered, his friends exacted from him a promise that he would never more work at his project. He returned to his trade, and was again doing well, but could not give up the notion that he had the grand discovery in his mind. One day he showed me a few wheels and levers, to give me an idea of his plan. He said he was pledged not to work at it himself, but wished some one else could understand and develop his idea.

I soon perceived that he had made that frequent mistake—taken *pressure* for *power*. When told that even if his machine should start, the variation of a hair's breadth in a thousand revolutions, would soon throw parts of it out of adjustment. "Of course," said he, "it must be made almighty accurate." "Yes," was the reply, that is it exactly, "*Almighty accurate!*" But neither you nor I can do that. He resumed work on his buggy, and never again spoke to me about Perpetual Motion. JEIGH ARRH.

TRIAL OF THE AVITOR.—The *Call* of June 29th, says: The aerial navigation machine, of which so much has been said during the past year, and upon which so much labor and thought have been expended, appears to be a perfect success. The working model, thirty feet in length, was tried near San Mateo on Sunday, in the presence of several gentlemen of this city, and worked like a charm. It not only ascended into the air, but while floating there, was readily propelled in any required direction by the machinery. A machine of sufficient capacity to carry eight or ten persons will be completed in six or eight weeks, and with it it is expected that the trip to New York can be made in twenty-four hours' time. The model which worked so satisfactorily on Sunday, will be exhibited at Bay View Park on the Fourth of July. In shape, the Avitor is an oblong cylinder, which is made to float horizontally in the air by being charged with gas. The front end is pointed, and the rear supplied with a rudder, by which the machine is guided. About one-third of the distance from the head to the stern, flats, or wings, are attached, one on each side, to aid in supporting the vessel when in air. Under these flats are eleven propellers, worked by steam, which give the vessel a forward motion. The inventor and builders of the Avitor firmly believe that a speed of one hundred miles per hour can be easily attained, under favorable circumstances.

THE CHEAPEST WAY WILL WIN.—Titusville, Pa., had at one time forty hotels. Teamsters were their chief support. But a revolution came. Teamsters were superseded. The right man stepped forward at the right moment, and spoke the word of common sense—always a danger and a menace to old routine. "Instead of all this clatter and hubbub of wagons and whips and oaths, in carrying loads of barrels over land, why not," said he, "send the oil silently flowing underground, through pipes, like so much Croton water?" The reform was of course opposed—as all such reforms must be at the outset—by the class whose interests were assailed. Mobs of teamsters tore up the pipes, burned the tanks, and threatened the lives of the pipe-layers. This was done repeatedly; but it was striving against fate. In 1865 the system was fairly established, in spite of all opposition, and now almost the entire product of the oil region, amounting to ten thousand barrels a day, flows or is forced through pipes, from the scattered farms, to the railroad centers, and the army of teamsters has disappeared. A great saving in transportation, in whisky, and profanity, has been the result.—*Atlantic Monthly.*

EARTHQUAKE IN NEW JERSEY.—A severe shock of an earthquake was felt in and about Elizabeth, N. J., on the 11th of June.

Machinists and Foundries.

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery to reduce ores, or saving either gold or silver. 13v10q3y-tf

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,
SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first-class work, and we intend to do no other.

GODDARD & CO.
San Francisco, May 1, 1868. 18v16tf

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,
SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

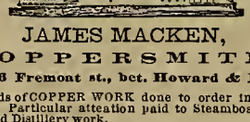
☞ PRICES MODERATE. ☜

J. P. GALLAGHER. J. H. WEED V. KINGWELL.
9v13-1y

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco, Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.
10v18qr



JAMES MACKEN,

COPPERSMITH,

226 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.
13v11

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,
of every description, manufactured 24v16qr

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders and Makers of all kinds of Machinery,

6v11tqr No. 28 Fremont street, San Francisco.

Miners' Foundry

—AND—

MACHINE WORKS

Nos. 245 TO 255 FIRST STREET,

San Francisco.

HOWLAND, ANGELL & CO.,

PROPRIETORS,

Manufacturers of Machinery for

QUARTZ MILLS.	**FLOUR MILLS,**
SAW MILLS,	**SUGAR MILLS,**
POWDER MILLS,	**PAPER MILLS**

Steam Engines of all Kinds.
Amalgamators of all Kinds.

MINING PUMPS,	**HOISTING WORKS,**
OIL WELL TOOLS,	**ROCK BREAKERS,**

—AND—

Machinery and Castings of all kinds, either of Iron or Brass.

Boilers and Sheet Iron Work in all its Branches.

Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

Russia Iron Screens, of any degree of fineness. We are the only manufacturers on this coast of the

HICKS ENGINE,

The most compact, simple in construction, and durable, of any Engine in use.

W. H. HOWLAND, H. B. ANGELL,
13v14-qr **CYRUS PALMER.**

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, height of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,
14v11 SACRAMENTO CITY

THE RISDON

Iron and Locomotive Works.

Incorporated, April 30, 1868. Capital, $1,000,000.
Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.
Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Dewoe, Dinsmore & Co., San Francisco.

Steam Engine Builders, Boiler Makers,

MACHINISTS AND FOUNDRYMEN.

All work in their line attended to with promptness and dispatch.

Directors:

S. F. Butterworth,	Chas. E. McLane,
Lloyd Tevis,	John N. Risdon,
Jas. Pollock,	Joseph Moore.
Ben. Holladay,	

JOHN N. RISDON, President.
Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

G. T. PRACY.

MACHINE WORKS,

NOS. 109 and 111 MISSION STREET,
Between Main and Spear.

New and second-hand

Engines and Boilers,

FOR SALE.

Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

MANUFACTURER OF

Lathes, Drills,

And MILL MACHINERY of every description.

PRACY'S

New and Improved

STEAM ENGINE

REGULATORS,

The best and cheapest yet invented—manufactured and for sale. Parties are invited to examine it in practical operation.

F. A. HUNTINGTON'S

Shingle Machines

on hand.

Particular attention paid to Repairing.

☞ All work guaranteed to be done in a first-class manner, and at the lowest rates. 12v17tf

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of
Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.
ap17-3m **113** Beale street, near Mission, S. F.

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,
Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES,

Of a superior make. manufacturer of the celebrated

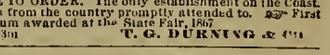
MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.

Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the
1v17tf United States

PACIFIC FILE WORKS,



No. 53 Beale Street, bet. Market and Mission,
SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867
2v17-3m **T. G. DURNING & CO.**

GLASGOW

Iron and Metal Importing Company

Nos. 25 and 27 Fremont street,
SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bandle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.
21v16-3m W. McCRINDLE, Manage.

Removal.

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel, Files,

Etc., Shear, Spring, German, Plow, Blister and Toe Calk Steel; manufacturers of

Mill Picks, Sledges, Hammers, Picks,

Stone Cutters', Blacksmiths' and Horse-Shoers' Tools, Have removed to **13 and 15 Fremont street,** near Market, San Francisco.
10v14qr

CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

143 Beale St., bet. Mission and Howard,
SAN FRANCISCO,

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to ☞ All work warranted.
2v17-qy **J. WEICHHART, Proprietor.**

BY MAIL.—The *Mining and Scientific Press* will be sent by mail to any part of the civilized world. In case of removal subscribers have only to inform us of the post office address of the old and new location, and the paper will be sent accordingly.

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

The Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, **220** Fremont street,

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector

This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

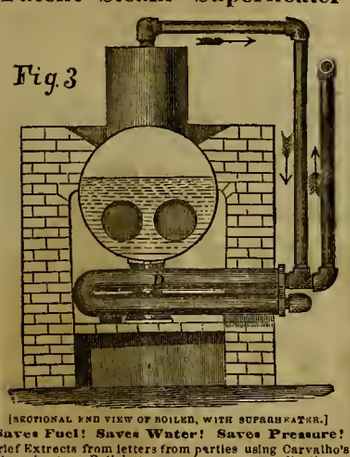
Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,

16v18-3m Patentee, Sacramento, Cal.

Important to every one using Steam for any purpose.

CARVALHO'S
Patent Steam Superheater



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1860.

"Superheater saves 12 per cent. in fuel and 10 per cent. more than speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CROCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

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"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 55° deg—an increase of 200 deg."

OAKEW MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867

"Superheater saves at least 25 per cent in fuel, and we have the advantage (cardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming."

CONTRA COSTA LAUNDRY, Oakland, July, 1868

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"Superheater causes a use of 40 lbs. steam instead of 60 lbs; use much less water, and there is a saving of fuel." (2 acts.)

SIXTH MECHANICS' INST. FAIR, S. F. Sept 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves two cords of wood in eight, or 25 per cent. in fuel; engine works better."

And many other letters of the same tenor.

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Awarded Silver Medal, American Institute, New York, 1865.

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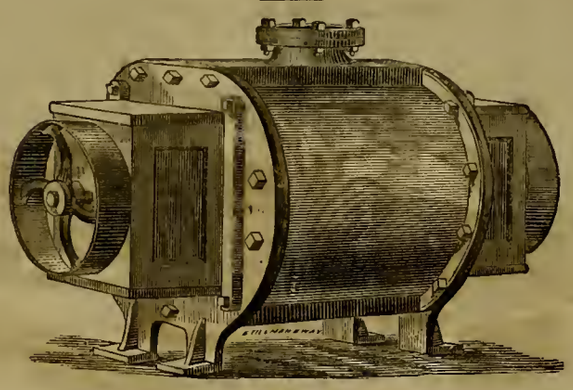
JOHN L. CONSTABLE, Engineer. 25v18tf

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.
MANUFACTURED BY KEEP & BARGION,
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,



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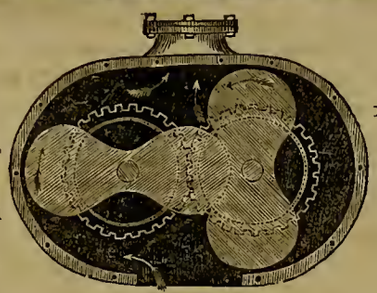

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Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

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REBELLIOUS ORES.
THE HAGAN FURNACE.

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Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

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GUARANTEED RESULTS,

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THE PACIFIC ORE CO.,
P. O. Box **1019**, San Francisco.

June 25 1869. 29v18-3m

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TWICE AS STRONG AND WILL CUT AT LEAST TEN TIMES AS FAST AS THE BEST NATURAL STONES.

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"Hard," for Machinists, etc.

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It is Simple in its Action

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It will last a lifetime; requires not mora than threa minutes's attention a day, to wind up the weight; generates gas jnst as fast as it is wanted, and stops making tha moment you stop nsing it; gives tha

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ANY OTHER MACHINE IN USE,

and works in cold climates as well as warm. Only those who hava used Gas Machines know what this means. Complete or partial failure in cold weather has destroyed confidence in them mora than all other causes combined.

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The relativa merits of all the Gas Machines on this coast.

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AWARDED BY THE

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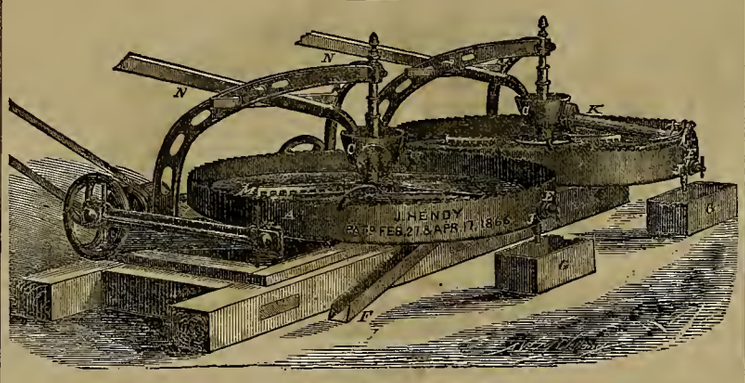
ALSO AT THE STATE FAIR FOR 1868,

To J. HENDY.



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J. HENDY, Patentee.

Office at Union Iron Works.

13v17tf

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Melter and Refiner, U. S. B. Mint.

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Messrs. A. S. Hallidie & Co:—We have thoronghly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every not obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

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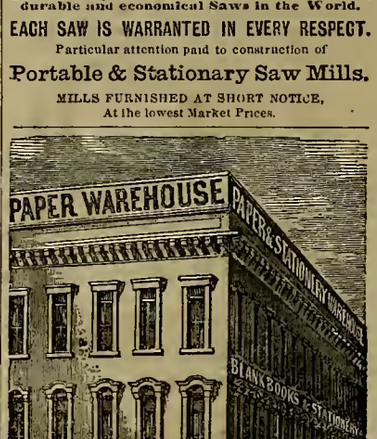
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SAN FRANCISCO, SATURDAY, JULY 10, 1869.

VOLUME XIX. Number 2.

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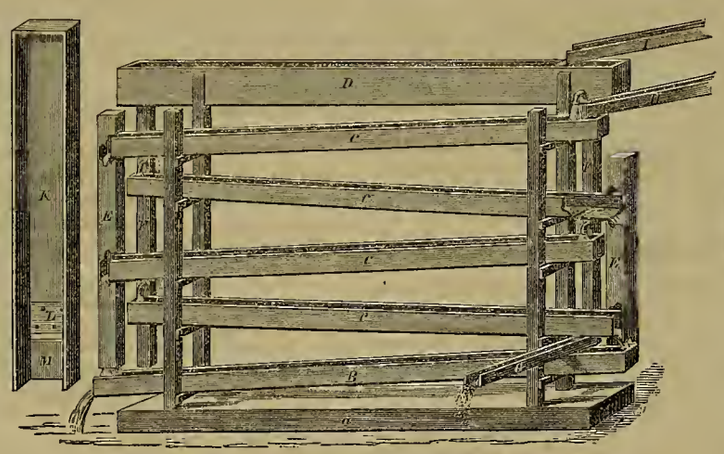
Student Sentiment.

The *College Courant*, a "weekly college and literary journal devoted to college interests, science and literature," published by C. C. Chatfield, New Haven, is received. A glance over its pages convinces one that the *College Courant* represents more than mere students' fancies; it is edited by an experienced and able hand, while the matter embodies as much of student impulses, spirit and buoyancy, as possible. College sentiment, where such sentiment has developed itself, is always significant because most powerful in its influence upon the future of leading men. All who have taken interest in the progress of ideas, will remember how the students of France and Germany have ever been leaders in the battles fought in favor of liberal and noble ideas. The revolutions of '48 and the prevailing national sentiment of the Germans especially had their origin, it is safe to say, in the blood and enthusiasm of the students in the universities of that country. If America has enough of life in its colleges to exhibit sentiment or individuality of any kind whatever amongst the throbbing pulses of students they are training, that circumstance alone is a much better evidence of the substantial usefulness of those institutions to young men who would make the most of life, than all the education that is imparted to them in lectures and classes; for books, with more efficient because practical instruction, are always at the command of young men of *impulse*,—that class of minds that will do the world's work, whether aided by extraneous or general knowledge, and orthodox polish, or not. Minds of this class are more likely than not to appreciate the value of universities and colleges, therefore usually have profited by them in their career; and it is the sentiment of such, that a student's organ should embody, rather than the soulless inanities of staid conservatism, dictated by stranded big-wigs *(zopf!)*—the preachers or professors that never knew what it was to own their own souls on live topics of the day.

FRUIT FOR NEW YORK.—A. Lusk & Co. yesterday received an extensive order from New York for fruit, to be forwarded as soon as possible. California fruit appears to be in demand in the East.

Heslep & Cochrane's Improved Concentrator.

One of the most important operations connected with mining anywhere, and at the same time, perhaps, the most neglected of all, on this coast, is the concentration of ores; hence much interest always attaches to any new invention which may promise to still further aid the miner in this difficult branch of his calling. We this week present our readers with something new in this direction,—a late invention of Messrs. Heslep & Cochrane, of Jamestown, Tuolumne County, Cal. The device is intended to receive the pulp from the mill, after it has passed over and through all the amalgamating apparatus which it may be deemed necessary to employ.



HESLEP & COCHRANE'S IMPROVED CONCENTRATOR.

Referring to the accompanying engraving, K represents the manner of constructing the sluice box employed. L is a metal plate made to slide back and forth so as to enlarge or make smaller, as need may exist, the opening just below the plate, for the discharge of sulphurets, or other heavy matter, while the sand and lighter portion, with the bulk of the water passes on and out at the end of the sluice. The entire bottom of all the boxes may be lined with copper plates, if desired.

Any desired number of boxes, thus constructed, are arranged in a frame-work, as shown at C, C, C, C; D is a reservoir of clean water, to be used as hereinafter described. The pulp is received at the elevated end of the upper box, C, and in passing down drops its sulphurets, amalgamated metals, and other heavy material through the slot shown below L; while the the chief portion of the water and waste is thrown over the slot and into the perpendicular box, E, by which it is conveyed to the waste trough, B.

The sulphurets are discharged into the upper end of the next trough, C, and so on through the entire series, every succeeding trough being arranged and operating precisely like the upper ones.

A stream of fresh water is received from the reservoir, D, through the perpendicular spouts or closed boxes, F, F, at the upper end of each of the series marked C, to take the place of the water which is lost for each box by the partial discharge into the waste boxes, E, E. The sulphurets, mercury and precious metals are finally received in any convenient receptacle placed under the delivery trough, G. The above description is all-sufficient to give a full understanding of the mode of constructing and operating this invention, for which a patent has been granted through the agency connected with this office. One of these machines has been in practical operation at Mr. Heslep's mine at Jamestown, where it is said to give most extraordinary results.

To Wash Fleece Wool.

The *Scientific American* has an article upon this subject, by Dr. Reimann, a portion of which we condense: The present practice of washing wool with decomposing urine, objectionable in many respects, is kept up by manufacturers because, as it would seem, they are not acquainted with Schlieper's process, discovered 20 years ago. This chemist was, in 1843, superintendent of an American carpet factory. He instituted experiments to supply the want of a suitable washing mixture for the wool. After many efforts, he finally prepared the following,—which well serves the purpose of cleansing the wool, without injuring it: Powdered carbonate of soda, 20 parts; powdered hydrochlorate of ammonia, 9 or 10 parts; olein, 9 parts. The amount of hydrochlorate of ammonia is dependent on the quality of the wool. The finer the quality, the greater the amount required.

From the mixture of carbonate of soda and hydrochlorate of ammonia carbonate of ammonia results. The soda of the carbonate is transformed into common salt (chloride of sodium). The olein combines with a portion of the soda, and is converted into oleate of soda or soda soap, and a corresponding amount of bicarbonate of soda is formed. The bicarbonate of soda serves with the bicarbonate of ammonia to prevent the carbonate of soda from exerting any injurious influence upon the wool. In this operation the olein facilitates the production of an emulsion with the fat of the wool. Herr Schlieper always found that the washing was incomplete without olein. The temperature employed in washing is of considerable importance. It depends upon the quality of the wool and the quantity of hydrochlorate of ammonia employed. It can only be found out by practice. Even slight elevations of temperature have very considerable influence in the process of washing. For instance, the wool bears well a temperature of 122° Fah., but is altered at 129° Fah. Another kind of wool withstands a temperature of 115° Fah., but is damaged at 122° Fah., and so on.

State University.

At a meeting of the Board of Regents, held on Tuesday, July 6th, Paul Pioda, of Santa Cruz, was elected as Professor of Modern Languages; Ezra S. Carr, formerly of the University of Wisconsin, was elected as Professor of Agricultural Chemistry and Horticulture; and Wm. Swinton, well known as a former correspondent of the New York *Times*, was elected Professor of Literature, Rhetoric and Logic. The Professorship of Mathematics will be acted upon at the next meeting.

It has been determined that the University shall be opened immediately,—this fall,—in the buildings of the present Oakland College. Though operations are going forward in the improvement of the Berkeley grounds, no plans for building are yet commenced being carried out. As soon as the same are decided upon, there will be a representation in the MINING AND SCIENTIFIC PRESS. The University prospectus recommended by the Committee on Instruction, is about to be published.

THE HOWLAND BATTERY—METROPOLITAN MILL CO.—A gentleman engaged in running a Howland's improved eight-stamp battery at the Kohler mill, writes that the mill, together with four Wheeler pans, are being run in a satisfactory manner with a seven-inch bore and ten-inch stroke Hoadley portable engine. The mill is doing good work.

The same writer adds that the Metropolitan mill commenced operations this week on their own rock. This is a new mill, with 900-pound stamps and Hepburn pans. The company's ledge is found to be about forty feet in thickness, much of which, it is supposed, will work as high as $80 per ton. The Metropolitan is owned by parties in this city, and is under the superintendence of Mr. Johnson, a practical and prudent millman.

A SPRIGHTLY letter from "R. G." of Treasure City, has reached us through Mr. Murray's hands, the facts of which had, unfortunately for the communication, all been published previously.

MANY FLOCKS.—There are said to be 100,000 sheep in San Luis Obispo County.

Communications.

White Pine Correspondence.

[Written for the Mining and Scientific Press.]

Ens. Press:—Now tbat the money market is getting a little casier in the Bay City, and the mills bave bad an opportunity to ship convincing proofs of the presence of the precious metals in tbis district in the shape of bricks, a few items in regard to the developments in the mines must be read in San Francisco witb renewed interest. A great majority of the producing properties are already owned in your city, as well as a large minority of the non-prodncing and "untamed feline article." The Press has a very respectable circulation in this vicinity, and is received bere as a standard of the mining business of the Pacific Coast.

The history of the Wbite Pine mines has been pretty thorougbly placed before your readers, with its lights and shadows. Trickery bas been resorted to, and many ewindles perpetrated; but most of these have been effected where parties were themselves at fault. People who buy mines because they are offered at a small figure, ebonld expsct to get the worst of the bargain, and generally do; while those who have examined before pnrchasing, and then paid a fair price, have, in nearly evcry instance, secured a ricb and permanent property. This is the case with the Virginia, Mammoth, Charter Oak, Pocotillo, Aurora North and South, Icebsrg, California, Copper Glance, Banner State, Comstock, Metropolitan, Pogonip, Otbello, Snowdrop, Consolidated Chloride Flat, and hundreds of otber mines which to-day rank on account of development as second class mines only on account of the slight amount of work which has been done npon them. There are now a few over 10,000 locations on record in the district; and it is eafe to say tbat nearly one-third of these will, by priority of another location on the eame vein or deposit, or from the fact of the location having been made where neither vein or deposit existed, eventually be abandoncd. Of the other two-thirds, more than three-fonrths will prove paying properties if managed fairly.

It is already demonstrated beyond a donbt that the district at large is a success; that the mines are legitimate paying mines. The Eberhardt has made its owners wealthy, and—telegrams and croakers to the contrary notwithstanding—has to-day as much and as rich ore iu eight as has been extracted. Tbe Pogonip and Othello will, by the time the company's mill is ready for operation, have at least eix months' supply of ore on their dumps. They are now raising about ten tons daily, which will produce between $200 and $300 per ton, and could, if necessary, put even now *one hundred men at work on pay ore.* Tbe Virginia, under the supervision of Geo. H. Willard, is turning out rich ore in qnantity. Pocotillo is fast proving itself a first-class mine, and before fall will stand eecond to few in tbe district. The Mazeppa has passed through a strata of low-grade ore, aud is again extracting very rich chloride. Work has been started again on the Rattler, and fine ore the consequence. Both of the companies on the Aurora are taking ont large quantities of ore, which produces about $100 per ton. The Post Hole Co. (lessees of the Snowdrop Soutb) extract about ten tons daily, whicb produces about $175 per ton.

The mills now in operation are overrun with ore, and the mines which are eituated off the road have no chance whatever. The tesmsters findiog tbose which are accessible easily can supply the mills, report for tbeir own benefit that fact to all wbo have inaccessible property; and the millmen state that they are of course ready to reduce any and all ore, but have just now contracted for all tbey can handle for the next three months. Most of the ore being reduced costs the owners at the rate of $50 per ton, and they receive but 80 per ceot. of the pulp assay at that. Forty dollars per ton and 87 per cent. of the pulp assay would be a fair figure this fall, and be doing justice to both parties. Then, after we have plenty of mills and their machinery in good order, ore can and no doubt will he reduced at $25, and possibly $20 per ton. When large lots are sent to the mill, by obtaining a clean-np, or, in other words, the bullion, instead of settling by tho assay of the pulp, even a slight advance in the returns may be procured. Tbere are now 128 stamps in operation; but from the various faults in tbe machinery they scarcely average one ton per stamp per day. New discoveries continue to bs msde almost daily, and ore worth thousands per ton (by assay) in new places found.

Bullion Hill, about three miles west of Hamiltou, has quite a number of mines, which will be famous as the Eberhardt itself duriug the coming month. Tbe latest spot is some three miles southwest of Shermautown. This was discovered to be rich only a few days since, and even now but few are posted on it. Several locations have been made there, and in a few days it will be more generally known, and a local excitement will follow. Rich ore is also being found on the west slope of the Base range, nesr the original discoveries, and, in fact, the people here are so excitsd over the piles of rich chloride that they are fast coming to believe tbat the rich belt is of the full size of the district; and as ore assaying in the thousands is found at all points, I don't pretend to say that tbey are all wrong. And, apparently, tbe belt extends across the valley west to Pinto, and tbence to Eureka district. In conversation with an experienced prospector just in from the mountains, a few days since, I was somewbat surprised to hear bim say this belt ran even tbrough the Cortez and Battle Mountain Districts, and he could trace it all tbe way. The tbeory of metsl running in alternate belts is not new, yet it bas never, in this State at least, bsen proven.

Tbe emigration this year will tend to fill ths entire eastern portion of Nevada with prospectors; and within five years the whole country will be examined. Then geology can be studied on a grand scale.

Tbe outside districts find it very hard to procure laborers, as all seem bound to stick to Treasnre Hill, if they starve in the attempt. The Lane & Fuller Co., of Austin, have lately employed men here and paid their passage to Austin, being unable to procure men nearer. They have leased the Metacom mill, witb the privilege of purchasing if their mine proves itself capable of supplying it with ore.

The bullion shipment of White Pine equals Austin, or rather Reese River, in its best days, even now, and will double it this fall.

We sball ship nearly $300,000 for June, and steadily advance for at least a year, when a further advance must depeud on deep work.

The election for District Recorder takes place on the 20th of July, and parties in San Francisco should interest themselves in the matter. Tbere are at present ten candidates in the field, among them W. P. Tenney, the present incumbent. Mr. Tenney has made a good custodian; the record books have been faithfully cared for, and tbe workmanship is indeed elegant. A safe has been procured for their protection, and a fine and convenient office erected, while deputies are kept constantly in the outskirts to accommodate all. Again, Teuney is personally acquainted with more locations than any other man among us. Confusion in the records would create litigation without end, and can scarcely be avoided nnder a new administration. It behooves all having interests of value here to attend, if possible, aud see that be is retained another year, when things will be more settled and better understood.

G. B. E.

Treasure City, Nev., June 28, 1869.

What Kind of Mines to Depend Upon.—Paradoxical as it may appear, the richest mines are the least, and tbe poorest mines tbe most profitable. North of Nevada there is but one "poor man's mine." Tbat yielded several thousand dollars per ton at first. Now, if worked at all, it yields moderately. In all Nevada there is but one White Pine District, and even there, and possibly at one other locality, only a few mioes yield $1,000 per ton.

During the past nine years the great Comstock mine of Nevada has produced $100,000,000, its ores averaging about $40 per ton. The Haywood mioe in California, has yielded $3,000,000, yet its ores average only $20 per ton. The very rich ore is apt to be found in pockets. But a low grade of ore of $20 to $40 per ton for gold, and from $50 to $200 per ton for silver, is more likely to be found in a regular, well-defined mioe in inexhaustible quantities.—*A "Well Burnt but finally successful Miner," in Appleton's Journal.*

Familiar Science.

Cause of Color in Animals.

The canse of tbe varisty of color on the skins of animals, and on the wings and bodies of insects, as on bntterflies, has long been a matter of much speculation, and of no little close study. It has been variously attributed to temperature; to an afflux of blood, occasioned by the physiological action of certain organs situated near the teguments, and to the influence of electricity.

Dr. Nicholss Wagner, of Paris, some two or three years since, entered upon an elaborate series of experiments to determine wbether or not electricity might have an influence in this direction. The insect world appearing to him the best calculated to solve the question, he selected a member of the butterfly family *(vanessa urticæ)* as a subject for his expsriments, in tbe course of wbich he satisfactorily determined that strong elements disorganized, first the pigments, next the scales, and tben the membrane itself. Weak currents simply changed tbe colors, transposing red into orange and black into red. A still weaker current, on the contrary, *gave rise* to black spots, and always nearest to the very places wbere such spots natnrally exist on the wings of the *vanessa.* In some cases slight changes were effected in tbe *shape* of *existing* spots; and in all such it was observed that tbe change of form followed the direction of the electric current. Rumkorff's machine was employed for intermittent induction currents; while for constant currents he employed two or three of Grove's elements. It was hence inferred that, at least in tbst class of insects, electricity acts as an irritating agent in the production of the variety of their color. Another series of experiments demonstrated the fact that fixed currents of electricity exist in the wings themselves of these insects. The strongest of these currents flow from the base of tbe wing to the outer margin, following the middle nervure; and other currents, starting from the same point, cross each other—the colors evidently being modified by the action of these variously modified currents.

Salt in Cooking Vegetables.—If one portion of a dish of vegetables he boiled in pure water, and the other in water to which a little salt has been added, a decided difference may be observed in tbe tenderness, flavor, and, if potatoes, mealiness of the two. Onions are probably more improved by being cooked in ealt water than any otber vegetable. Much of their unpleasant emell is taken away, and a peculiar sweetness and improved aroma is decidedly apparent. Salt hinders the evaporation of tbe soluble and flavoring priuciples of vegetables.

How to Breathe.

The action of respiration should never be carried on through the mouth. "God breathed into man's *nostrils* the breath of life." The correctness of the inspired writer of old is fully sustained by modern philosophy and physiology. The miechievous habit of carrying on the action of respiration through the mouth instead of through the nose, is the real origin of almost all the diseases of the throat and lungs, and even consumption itself. Medical writers tell us that the excessive perspiration to which some are liable in their sleep, and which is so weakening to the system, is mainly the result of sleeping with tbe mouth open. Whether you walk, sit, read, write or sleep, keep your mouth closed, except when engaged in conversatiou or necessary vocal reading.

Tbe pbilosophy is this: The velocity of the blood through the body, and the heat of the body itself, depends maiuly upon the quantity of atmospheric sir taken into the lungs. Nature measnres that quantity by the nostrils, not by tbe montb. When the mouth is employed tbe measure is too great; bnt just sufficient when the nostrils are used. An excess of air overheats the body, while its passage through the mouth otherwise injuriously affects the throat. The habits of children, in this respect, should be carefully watched and regulated. Open mouths prodnce a vacant and nnseemly appearance, and may bs regarded as very sure precnrsore of habitual colds and sore throats.

Clothing and Health.

Many lives are lost every year by an injudicious use, or rather change of clotbing. It is always safe to put on additional clothing; but the greatest care should be taken in reducing it—either for the sesson or for the day. Tbe nse of flannel shonld become more general and more persistent. It is safe, nay, it would be beneficial to the bealth of every person to wear flannel nnderclothing, the year round—of course nsing thinner material in snmmsr. It should be changed often, bowever, especially in summer. No doubt scores, if not hnndreds of lives are lost every year in this city by sitting in cold rooms morning and evening. Fires ehould be more generally used here. Health is always endangered when chilliness comes over the system. Children are thereby exposed to the croup and other kinds of illness, and old people to inflammation of tbe lungs. Hall's *Journal of Health,* in allndiog to this subject, says:

The old and the young delight in warmth; it is to them the greatest luxury. Half the diseases of humanity would be swept from existence if tbe human body were kept comfortably warm all the time. The discomfort of cold feet, or of a chilly room, many have experienced to their sorrow; they make the mind peevish and fretful, while they expose the body to colds and inflammations which often destroy it in less than a week.

Children's Arms and Legs.—A distinguished physician, who died some years since in Paris, declared: "I believe that during the twenty years that I have practiced my profession in this city, twenty thousand children have been carried to the cemeteries, a sacrifice to the absurd custom of exposing their arms naked." On thie the editor of tbe Pbiladelphia *Medical and Surgical Reporter* remarks:

"Pnt tbe bulb of a thermometer in a baby'e mouth, the mercury riees to ninety degrees. Now carry the same to its little hand; if the arm be bare and the evening cool, the mercury will sink to fifty degrees. Of course all the blood tbat flows through these arms must fall from ten to forty degrees below the temperature of the heart. Need I say when these currents of blood flow back into the chest the child's vitality must be more or less compromised? Aod need I add that we ought not to be eurprised at its frequent recurrent affections of the tongne, throat or etomach? I bave seen more tban one cbild witb habifual cough and hoarseness, choking with mucus, entirely and permaocntly relieved by simply keepiog the hands and arms warm. Every observing and progressive physician hae daily opportunities of witnessing tho same cure."

Poisoning by Adulterated Tin Foil. Tbe tin foil in wbich so many articles in common use are wrapped, is made by inclosing an ingot of lead between two of tin, and rolling them together into foil. The outer layers often become broken; and then the full effect of the poisonous lead is exercised upon sucb articles as will act npon it. Tobacco, cheese, smoked meat, dried fruits and pickles, are such articles, and are often brougbt in contact with it in the packiug. The *Journal of Applied Chemistry* says that the nervous twitching of the muscles of the face, which is noticeable in some tobacco-chewers, is undoubtedly due to paralysis caused by lead poisoning. The butyric acid resulting from the butter contained in cheese, makes a poisonous salt with lead; and the acid of fruits, as it ie perhaps unnecessary to eay, will do the same. A reform in this matter of packing in tin foil is to be desired.

Mechanical Progress.

The Wood Screw Manufacture.

A single Birmingham firm produces rather more than a thousand million wood screws yearly—or, say, 150,000 gross weekly. This firm, as also M. Japy, who has large screw-making works in France, "use,"—saye *Engineering*,—"the remarkably ingenious machinery invented by T. J. Sloan, of New York." The works of the Birmiaghaai firm employ a thousand people. To convey an idea of the extent of the business, and at the same time give an interesting mechanical item, we quote the following from the journal above named:

"The cutting of the slot in the head of the screw is effected by circular saws, of which Messrs. Nettlefold and Chamberlain use and wear ont 150 gross, or upwards of 20,000 saws weekly, each saw cutting the slots in about 1,000 screws. These saws, of from 90 to 100 teeth, and of but 3 in. in diameter, cost M. Japy, the French manufacturer, about 7d. each. Mr. Batho, who was for some years the engineering brain of Nettlefold's screw factory, contrived a plan of making these saws at a cost of about ½d. each. He placed 144 (a gross) of thia circular plates, 3 in. in diameter, upon a mandril, and subjected them, as if they were a single piece of metal, to the action of a series of slotting tools. For saws of 100 teeth he at first employed 10 cutters, thus finishing the saws, 144 at a time, by 10 complete cuts. He afterwards employed cutting tools adapted to form three teeth, each at a single cut, so that, for 90-tooth saws, but three changes of feed were necessary, 30 teeth being cut, by ten tools, at each adjustment. The line of cut, instead of being parallel with the axis of the mandril to which the saws were fitted, required to be spiral or twisted, to give the proper cutting angle to each tooth of the saws. This was effected by giving to the group of saws the slight necessary axial rotation during the cut, which would correspond to the requisite angle of the cutting edgee of the saws. It is something to save 20,000 sixpences, or 500*l*. a week, in the mere matter of sawe for cutting the slots in screw heads."

Electro-maonetic Safety-Lamp.—One cause of the frequent coal mine explosions is the recklessness of the miners, who will often open their safety-lamps in order to light their pipes. Locks, the keys of which are kept by the foreman, have failed to meet the case; for they are often picked by the very men for whose safety they are contrived. An English inventor has just patented a lamp which is not open to this objection. It is described and illustrated by the London *Mining Journal*. The bottom screws on; and when quite home to its place, a steel pin springs up and fastens it there. Thie pin is within the lamp, and cannot be seen or reached. It can he withdrawn only hy a powerful magnet applied outside; one more powerful than any that can be carried in the pocket. An electro-magnet is used. This magnet with its battery is fixed in the lamp cabin, is constantly ready for use, and is under the charge of the foreman. The oil lamps, of various kinds, can easily be altered to this.

Boiler Joints.—W. M. Henderson saye: Riveted joints exposed to a tensile strain, are directly, or nearly so, as their respective areas, or in other words the collective areas of the rivets should be equal to the collective areas of the plate, taken through the line of rivets.

The proportioual size of rivets, pitch of ditto, and lap of joint, will he as follows: Diameter of rivets for plates up to three-eighths is twice the thickness of plate. The pitch for three-sixteenth and one-quarter inch plates is six times the thickness of plate; for five-sixteenth and three-eighth inch plates it is five times. The lap for three-sixteenth, one-fourth, and five-sixteenth inch plates should he six times the thickness of plate, and for three-eighth plates five and a half times. For douhle riveting, add two-thirds of the depth of the single lap. Diameter of half-round heads oue-fifteenth for one-eighth of diameter of rivet. Diameter of conic heade twice the diameter of rivet, and the hight of both description of heads, three-fourth diameter of rivet.

Galvanic Deposition of Nickel.—It was for a long time practically impossihle to deposit nickel in more thau a mere film. This thin deposit would then become oxidized, and worthless. Dr. Adams of Boston has succeeded in obtaiaing deposits an eighth of an inch in thickness. He does this by modifying the character of the solution. The *Artisan* gives a hrief discusseion which took place at a meeting of the Polytechnic Association of the American Institute upou the different conditione under which tho electro-deposition of different metals takes place. It was remarked that the experimentation which had been gone through with upon nickel, would probahly he of value in similar researches with rogard to eueh metals as iridium, etc. A nickel electrotypo plate wonld bo practically incorrodihle, and much harder than copper, and consequently far superior to it.

Smooth Pulleys and Smooth Belts.—Mr. James Christie sends the result of his experience to the *Journal of the Franklin Institute*, from which we quote:

"In order to ohtain the full value of a belt, it is first necessary that it should he in thorough contact with the pulleys. A new helt will bo found touching in spots, and will not pull well; any unguent on the helt will be found of immediate henefit, as it softens its eurface, and hrings it in complete contact with the face of pulley. The hair side, on account of its emoothness and closeness of textnre, seems to conform to this coudition sooner than the flesh eide, which is open in texture and rough on the surface. But after the helt is once worn to the proper condition, I doubt if there ie any appreciable difference in the two sides, in value. In fact, with *well-worn* helts, which have been used alternately with each side to pulley, it is often difficult to distinguish the hair side from the flesh side. By *well worn* I do not mean *injured by use*, but simply that condition of helt in which the color of the eides is rendered uniform hy absorption of oil, and in which the surface gloss and texture is made nearly uniform by contact with pulleys. Iatimate contact hetween helts and pulleys is undonbtedly necessary. The utility of emooth faces to pulleys is also well estahlished."

Cornish Pumping Engines.—H. P. Birkinhine, engineer, writes thus of these engiues: "The exhaustive works of Wicksteed & Pole fully describe the construction and operation of these engines, and demonstrate theoretically, and hy the actual working of engines in operation, that there is no other form which gives as high duty; that is, raises as much water with a given amount of coal. An experience of nearly seven years as chief engineer of the Philadelphia Water Works, and an extensive connectiou with other water works, has satisfied the writer that where any considerable amount of water is to be raised the Cornish engine is not only the most economical in all iteme of running expenses, but also the most reliahle, and that no other form of engine should he recommended."

New Steam Ice Machine.—Dr. Van der Weyde, of New York, has recently,—saye the *Artisan*,—patentsd a freezing machine in which, hy the consumption of one ton of coal to operate a small steam engine, a degree of cooling may be produced equal to that obtainable from fourteen tons of ice. The liquid hy which its evaporation produces the cold, is a very volatile gasoline, and is obtained from petroleum. It costs about twenty cents a gallon, and may be used over and over again. The cost of producing ice by this means will be $2 per ton; or, one-tenth of one cent per pound.

Black Walnut Polish.—We find the following in the *Chemical News:* Pour over pulverized asphaltnm twice ite bulk of turpentine, put it in a warm place, and ehake it from time to time. When dissolved, strain it, and apply it to the wood with a cloth or stiff brush. If it ehould make too dark a stain, thin it with turpentine or benzole. This will dry in a few hours.

Spherioal Safety-valve.—In a directly loaded safety-valve introduced hy Mr. Nasymth, the valve is a sphere, and has a load hung to it *inside the boiler*. Mr. Fairbairn loads the safety-valve by a weight and lever inside tho boiler.

Scientific Progress.

Deep Sea Sounding—The Bathometer.

It has been pronounced impossihle to souad the greatest depths of the ocean with a lead and liue. Soundiag is uncertain even in moderate depths, owing to undercurrents, and to the drifting of the operator'e hoat. But au ingenious arrangement has recently been patented hy Sidney E. Morse, the geographer, and former editor of the *New York Observer*, associated with his eou Livingston Morse,—hy which all difficulties aro obviated, and the deepest soundiags ohtaiued with the greatest accuracy. It is called the "bathometer," or "depth-measurer." It was exhihited at a recent meeting of tho Association for the Advancement of Science and Art, in New York. It consiets of a hollow cylinder of wood or tia, six inches in diameter, and of any desired length, containing a number of hollow glass epheres filled with air, which, hy their huoyancy are to bring the apparatus hack to the eurface after its descent to the bottom. The cylinder is so ballasted that it will take an upright position in the water. A weight is attached, which releases itself at the touch npon the bottom, allowiag the cylinder to rise. This it does with the same rapidity with which it sinks; and as that has heen determined by previous experiment, the time which passes during its disappearance, after heing thrown overboard, serves to indicate the depth to which it has descended. Moreover, there is attached to the cylinder a glass vial containing distilled water, and having its neck inverted iato a rubber bag filled with mercury; a connection between the hag and vial heing secured by means of a thermometer tube passiag through the india-ruhher stopper of the vial. The pressure upon the bag at different depths, causes a greater or less quantity of the mercury to make its way through the tube into the vial, compressing the distilled water to a proportionate extent. This quautity of mercury is another index of the depth reached; and it is measured hy inverting the vial, and thereby causing the mercury to flow into a graduated tube which is attached to it near the neck. A third mode of measurement, which may be employed as corroborative of these two, is tho attachment to the machine of some one of the different self-registering instruments which are in use to indicate the distance passed through.

The *Tribune* says of this apparatus: "The advantages claimed for this instrument in addition to its much greater reliability, are great economy of time and convenience of using. By the old method, from six to seven houre were required to ohtain a sounding of 2,000 fathoms, while the Messrs. Morse estimate, from experiments which they have made, that their instrument will sink to that depth and return to the surface within thirty minutes. Nor is it even necessary for the operator to wait at all for the reappearance of the instrument, as the indications once made remain undisturbed; and in case of stormy weather the machine might he left to float about until a more convenient season, or to he picked up by some other vessel."

The *Scientific American* says: "In a recent experiment the instrument rose from the bottom at the rate of twenty feet a second, or of a mile in less than four minutes and a half. They helieve that a sounding in 2,000 fathoms water will ultimately be made easily in less than fifteen minutes. The time occupied in a sounding of this depth hy those employed by the United States Government in sounding hetween Ireland and Newfouudland, preparatory to laying the Atlantic cable, was ordinarily six or seven hours."

Museum Pest.—It is eaid that crystals of carholic acid, placed here and there in cabinets, will, by their evaporation, kill all insects that might destroy entomological specimens or others belonging to natural history collections.

The Zirconia Light.

Our readers will remsmhsr the announcement which was made some three or four months since, to the effect that zirconia would uadoubtedly take tho place of lime, ia the production of light under the oxy-hydrogen flame. It was then asserted that it uot only did not crumhle and waste, like lime, either when iu or ont of nse, but that it gavo more light under given circumstances. But for eome reason the French inventors failed to briag their lamps before the English puhlic. The Paris correspondent of a London jonrnal, recently sent the editor one of them, with a euggestion that he test its power. The light was *much less brilliant* than that with lime, under the same conditions, as to the size of the fragment used, and its distance from the jet. Nor did any of the many variations made in these conditioue by the experimenters, alter the result. *The Engineer* of June 4th, after describing the experiments, says:

These conclusions do not in any way affect the question of the permanency of zirconia under the fierce heat of the oxyhydrogen flame; but such permanency, if purchased at the expense of inferior light, is too dearly hought, aad will condemn the invention. Unless the inventors are acquainted with eome peculiarities of zirconia unknown to those who are versed in the use of the lime light, and can by an unknown method bring out a light from the zirconia equal to that given by lime, the zirconia light, from an economical point of view, ie a failure.

Reduction of Silver.—Dr. Grager euggests,—says Prof. Joy,—a modification of the old method of redueing chloride of silver by metallic zinc, that ought to he more generally known. The chloride is dissolved in ammonia, and poured into a well stopped hottle, into which metallic zinc in fragments is introduced. The bottle is well ehaken at intervals. Three hours will euffice to reduce one-quarter pound of ohloride. The solution is occasionally tested with hydrochloric acid, and when no cloudiness results, the reduction is completed. The silver is then washed with water as long as any odor of ammoaia is perceptible. The zinc fragments are removed hy pouring the contents of the bottle through a funnel, the opening of which is too narrow for the passage of the fragments.

The Aurora.—We extract the following from a recent article hy Professor Loomis: Auroral exhibitions take place in the upper regions of the atmosphere, siuce they partake of the earth's rotation. Whenever an auroral corona is formed, it maintains sensibly the same position in the heavens during the whole period of its continuance, although tho stars meanwhile revolve at the rate of 15 degrees per hour. At the hight of a little over four miles, the density of the air is only one-half what it is at the earth's surface. The phenomena of shooting stars indicate an atmosphere at the hight of 200 or 300 miles, while the aurora indicates that the atmosphere does uot entirely cease at tho hight of 500 miles. Auroral exhibitions take place, therefore, in an atmosphere of extreme rarity; so rare indeed that if, in experiments with an air pump, we could exhaust the air as completely, we ehould say that we had obtaiued a perfect vacuum.

Tho auroral beams are simply spaces which are illumined hy the flow of electricity through the upper regions of the atmosphere. During the auroras of 1859 these beams were nearly 500 miles in length, and their lower extremities were elevated about 45 miles above the earth's eurface. Their tops inclined toward the South, about 17 degrees in the neighborhood of New York, this heing the position which the dipping needle there assumes.

Proposed Change of Equivalent.—M. Rabache says that if chemists would adopt four as the equivalent of hydrogen instead of one, it would cause the fractions of equivalents 0.5, 0.25—which occur rather frequently,—to disappear; moreover, it would enable us to considor this new equivalent as representing four atoms placed at the summit of a regular tetrahedron.

Farming and Gardening.

Indigenous Cereals and Grasses of California.

Much has been said of the wonderful display of indigenous florals in California, indeed this State has been called the paradise of botanists. But California is still more remarkable for its native cereals, and other valuable grasses. If the entire catalogue of native cereals were to be swept from the face of the earth, California alone would be able, in a few years, to produce from her native grasses every variety of wheat, barley, oats, rice, millet, etc., which now constitutes such a large proportion of the food of the human family, and of laboring animals.

The wild oats which cover thousands of miles of our territory are admitted by botanists to be pure, unadulturated natives of the soil, and not the result of the deterioration of the cultivated grain of early settlers. The early Spanish explorers, more than 300 years ago, found native wheat growing along various portions of the sea coast. Prospecting miners have frequently, of late years, reported indigenous wheat along the central places of the western slope of the Sierra Nevada; and native rye and barley are also frequently met with in the same localities. We have seen it stated that the rye has been cultivated, and samples of same taken to the East. This grain the editor of the *Prairie Farmer*, to whom it was shown, pronounced "a very excellent variety of white rye, with a long, plump berry, of a beautifully clear color, making, it is said, a very superior flavor." Indigenous rice and millet are found plentifully in the Tulare swamps, and in other localities. Beans, pumpkins, cotton and maize were cultivated by the Indians of the southern portion of the State, when the early missionaries and other adventurers visited that region as long ago as 1541.

Native varieties of flax, hemp and tobacco, as well as a very superior species of wild sugar-cane, have been known to the Indians in this State from time immemorial. Such facts as these were received with much incredulity a few years ago; but now, we believe, they are nowhere disputed.

Some two or three years since the Stockton *Republican* noticed, substantially as follows, the discovery in that vicinity, of what appeared to be something quite new in the line of cereals: The ear or cluster of grains, formed on the summit of the stalk, was about 3½ inches in length and four in circumference; the grains, several hundred in number, were about the size of the seed of broom corn; but harder than wheat and undistinguishable in taste from maize. The weight of a single head was equal to some fifteen or twenty well-formed heads of wheat, and evidently grew upon a stalk larger and stronger than wheat; but smaller and less fragile than corn. It would doubtless prove of interest to learn whether any attempts have been made to improve and develop this cereal by cultivation.

Native Grasses.

Some fifteen years ago, in the early days of Grass Valley, Dr. Cleveland, of that place, furnished the *Telegraph*, with which paper the writer of this was then connected, the following information with regard to the indigenous grasses then found on a single ranch in that town:

There are ten distinct varieties of grasses, all of which, save one, (blue grass, brought from Missouri in '50,) were taken from the ranch of J. B. Underwood, Esq., two miles from Grass Valley. They all exhibit thrift and high perfection in their growth, while the majority of them, by their limited culm and vast blades are distinguished as among the most nutricient and desirable species known.

We enumerate them in the order of their value: 1. Blue Grass. 2. Bunch. 3. California Timothy. 4. Heavy Top. 5. California Blue. 6. Swamp. 7. Rat-tail. 8. Tickle, similar to this well-known variety in the Western States. 9. Wire. 10. File. The Blue-grass, upon which are reared the noble cattle and fine steeds of Kentucky, succeeds most admirably on the farm of Mr. Underwood. Some eighteen months since he sowed a small quantity of seed about the numerous springs which burst from the foot of the mountain where his lands lie, and it is mingling miscellaneously with the Creole gramiuæ, above which its blue tops are seen waving in triumphant luxuriousness, and true American-like, bids fair to crowd out every indigenous variety.

With the grasses, the doctor exhibited to us, forty-three stalks of black-rye, growing from one seed, all flourishing and of fine size, likewise, a species of clover, entirely new. This Mr. U. thinks, will prove a fine fertilizer; it attains to more than a foot in hight, its bloom is charming, the fattening herds revel in its luxuriousness. The botany of the mountains is mostly new and novel, and we trust that its supreme beauty and meritorious character will ere long give it a place within the pale of science.

Rose Culture for Profit.

Roses are extensively cultivated about Adrianople, for the fragrant oil which they produce. The rosefields in the vicinity of that city extend over some 14,000 acres, and furnish a most important source of wealth. A traveler who recently visited this locality, writes that the season for "picking" is from the latter part of April to the early part of June; and that during that time the plains are one vast garden full of life and sweetness. Hundreds of Bulgarian boys and girls are out gathering flowers, from early morn to eve; while the air is impregnated with fragrance and enlivened with songs, music and dancing.

If the weather is cool, and copious falls of dew, with occasional showers, bless the gardeners, the crop is abundant, and large quantities of oil are secured. In favorable seasons, twenty-three pounds of leaves yield a miscal (1½ drachms) of ottar of roses; in dry and hot seasons this yield is reduced sometimes one-half. The average aggregate yield of the district is about 700,000 miscals of ottar, which will generally bring, upon the spot, something over $500,000. An acre of ground, well cultivated, will yield about 150 drachms, which is worth $75. The cost of production and extraction is about $50, leaving $25. The oil is extracted by the usual process of distillation. It passes into foreign markets chiefly through Constantinople and Smyrna. Before going beyond these places, however, it is almost universally adulterated with sandal-wood and other oils. So universal is this practice, and so little is known abroad of the genuine ottar of roses, that the pure article can scarcely be sold.

Fragrance Artificially Imparted to Flowers.

We have shown in previous issues how flowers may be artificially colored. Another singular discovery was reported in an Italian paper, some few years since, to the effect that a pleasant fragrance may also be artificially bestowed upon inodorous flowers; while the natural fragrance of others may be more or less modified or blended. The discovery was said to have been made by an Italian florist in Aricia, and the process as described substantially as follows. We give it for whatever it may be worth:

In order to attain this object, the roots of the plants are covered with fragrant manures. Thus, with a decoction of roses, the discoverer has been enabled to give to the Rhododendron the perfect fragrance of the rose. In order to insure a successful result, it is necessary to treat the seeds of the plant to which it is desired to give fragrance. They are steeped two or three days in the required essence, then dried in the shade, and shortly afterward are sown. If it is desired to change the natural odor of the plant for one more agreeable or more desirable, the strength of the essence is doubled or tripled, and a change must be made in the nutrition of the plant. In order to make the artificial odor permanent, the plant must be sprinkled and dampened with the essence several days in the spring for two or three years. And thus, also, it is said, a gardener may, at his pleasure, cause different plants or trees to share their odors with each other, by boring through the stalk, or trunk, or root, an opening into which to pour the fragrant ingredients.

Fruit-Grower's Meeting.

The fruit-growers of California met in this city on Wednesday last, for the purpose of devising some concerted action with reference to determining the feasibility of sending fruit to the East *via* the Pacific Railroad. After passing a series of resolutions to that end, the meeting finally resolved itself into a permanent organization, and elected the following list of officers for the ensuing year: President, S. W. Shaw; Vice Presidents, B. N. Bughee and D. W. Grant; Secretary, W. H. Stevens; Treasurer, Charles W. Weston. Directors—H. Robinson and E. D. Llewellen, representing Alameda; L. A. Gould, Santa Clara; J. M. Thompson, Napa; R. B. Blewer, Yolo and Solano; A. P. Smith and W. K. Strong, Sacramento; J. M. B. Weatherwax, El Dorado; John Briggs, Yuba and Sutter; Mr. Rose, Los Augeles; F. W. Haskell, P. L. Webb, A. Lusk and W. K. Cummings, San Francisco; Mr. West, San Joaquin.

Annual meetings will be held on the first Thursday of May of each year, when the election for officers will take place.

The Convention adjourned to meet again on the 16th instant, when it is anticipated that some definite proposition from the railroad company will be presented with regard to the tariff to be adopted for the transportation of fruit.

The matter is one eminently worthy of consideration; and it is to be hoped that measures will be concerted which will make it advantageous to the railroad company to use the powerful means at its disposal for developing on this coast a business which, with a suitable market, must soon grow into mammoth proportions, and prove of untold benefit to our people.

Mammoth Rose Bushes.—There is a Cloth-of-Gold rosebush in the garden of Mrs. Col. Marshall, in the city of Savannah, Ga., the stem of which is 24 inches in circumference, and a *Marechal Neil* of 16 inches girth.

There is a Cloth-of-Gold rosebush trained upon the walls of a factory building in Augusta, Ga., whose stem is 72 inches in circumference, and whose branches are trained over a surface 70 feet high by 120 feet broad. This is probably the largest rosebush in the world.

The largest rosebush in Europe is said to be in Toulon, France. It measures 32 inches in circumference, and is trained over an area 75 feet long by 18 in hight. It is said that this bush often produces as many as 50,000 roses in the months of May and June.

The Intermixture of Seeds.—Varieties of beets, cabbages, turnips, and all other kinds for seed, should be set as far apart as possible, to avoid intermixture, especially cabbages, no two varieties of which should be seeded within half a mile, certainly never nearer than eighty rods. Beans may be planted nearer together, with less danger of mixture, than most other seeds. Any varieties may be grown close together, free from mixture, if they do not *flower at the same time*. Cucumbers, melons and squashes will not mix, as is supposed by many, neither will the watermelon mix with the muskmelon. The large, thick, white seeded squashes, with the fleshy stems, like the Boston marrow and hubbard, will not mix with the flat, drab seeded ones, with angular stems, like the winter crookneck, summer squashes, or common yellow pumpkins, but these latter will mix together. Whatever mixture takes place in the seeds of cucumbers, melons and squashes, tomatoes, egg plants and peppers, will not appear in the *fruit* the first year. It is in the crop from the seeds of different varieties of these which have been grown near together that the mixture will show itself the next year.—*American Agriculturist.*

How the French Fatten Poultry.

A large circular building, admirably ventilated, and with the light partially excluded, is fitted up with circular cages, in tiers rotating on a central axis, and capable of being elevated, depressed, or rotated, which are so arranged that each bird has as it were, a separate stall, containing a perch. The birds are placed with their tails converging to a common center, while the head of each may be brought in front by a simple rotary movement of the central axis. Each bird is fastened to its cell by leathern fetters, which prevent movement, except of the head and wings, without occasioning pain. When the feeding time comes, the bird is enveloped in a wooden case, from which the head and neck alone appear, and which is popularly known as its "paletot," by which means all unnecessary struggling is avoided. The attendant (a young girl) seizes the head in her left hand, and gently presses the beak, in order to open it; then with her right, she introduces into the gullet a tin tube about the size of a finger. This tube is united to a flexible pipe, which communicates with the dish in which the food has been placed, and from which the desired quantity is instantaneously injected into the stomach. The feeding process is so short that 200 birds can be fed by one person in an hour. The food is a liquid paste, composed of Indian corn and barley saturated with milk. It is administered three times a day, in quantities varying according to the condition of each bird. This food seems to be very satisfactory, for if any chances to fall they devour it all as soon as they are released from their paletots. The poultry house is well ventilated; but, of course, it is almost impossible for any place where 600 fowls are confined to be entirely free from smell. It takes about a fortnight to fatten a bird by this method. Before being killed the birds are left in a dark but well ventilated chamber for 24 hours without food. Each fowl is then taken up by its feet, wrapped up so as to prevent all struggling, and then bled so adroitly in the throat that its death seems instantaneous. The blood is then allowed to flow from it, and finally, after being plucked, washed, and cleaned, it is wrapped in a damp cloth and is ready for sale. From forty to fifty fowls are thus killed and sold daily.—*Scientific American.*

The Functions of Grass.

It is because of its exceedingly important character in the economy of nature, that green grass is so universally spread over all countries, and in all climates where air-breathing animals exist. Its functions are extremely interesting, and very remarkable. Grass acts first on inorganic matter held in solution in water, which its roots suck up at their extremities and combine with essential elements extracted from the atmosphere. When thus combined, the grass becomes nourishing food for herbivorous animals. Without it, they could not live at all. All their digestive apparatus is constructed with reference to appropriating food thus originally prepared in grass for their growth and health. Carnivorous animals could not feed on vegetable food, but as soon as that has been animalized by being eaten, then they feed on the flesh of those that feed on grass. Lastly, man, being omnivorous, has the necessary mechanical organs for digesting either vegetable or animal food, separately or combined. Grass, therefore, begins the process of furnishing food for the cattle on the thousand hills; men eat the beef; and so all flesh is actually grass, according to the Bible. Destroy the grass, and the great magazine of universal food would fail, and all animal life would cease by starvation.

To Cover a Steep Bank with Grass.—The following method is recommended by a German horticultural association. For each square rod to be planted, take half a pound of lawn grass seed, and mix it intimately and thoroughly with about six cubic feet of good dry garden earth and loam. This is placed in a tub, and to it liquid manure, diluted with about two-thirds of water, is added, and well stirred in, so as to bring the whole to the consistency of mortar. The slope is to be cleaned off and made perfectly smooth, and then well watered, after which the paste just mentioned is to be supplied with a trowel, and made as even and thin as possible. Should it crack by exposure to the air, it is to be again watered and smoothed up, day by day, until the grass makes its appearance, which will be in eight to fourteen days, and the whole declivity will soon be covered by a close carpet of green.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, July 10, 1869.

City Stocks.

The week under review has been a dull one so far as stock dealings of every description were concerned, the Board having adjourned for a number of days to allow a general holiday during the period in which our national anniversary occurs....Sales of Spring Valley Water Co. stock were made at $64 50@64 25....The Pacific Insurance Co. have declared their usual quarterly dividend of 1 per cent. per month for the quarter ending June 30th. The annual meeting of stockholders will be held on Tuesday, the 13th instant. The Union Insurance Co. has also declared its usual dividend, payable on and after the 12th. The Occidental Insurance Co. announce their usual quarterly dividend of 1 per cent. per month for the three months closing with June; and the People's Insurance Co. their usual monthly dividend, both payable on and after the 10th inst. ....The savings banks are beginning to announce their dividends out of the earnings of the past six months. The Odd Fellows' Savings Bank will disburse 13 per cent. per annum, free of Federal tax, on and after the 15th. The Savings Union pay at the rate of 11 2-3th per cent. per annum on term, and 9½ per cent. on ordinary deposits, in both cases free of Federal tax, on the 15th inst. The German Savings and Loan Society same dividend as Savings Union. The Sacramento Savings Bank had $1,303,181 55 on deposit on the 30th of June, distributed among 2,510 depositors. They pay a dividend of 1 per cent. per month for the first six months of the current year.

The Stockton Savings Bank credits its depositors with $261,659 at the close of June. Stockholders receive a dividend of 12 per cent. per annum; six months depositors, 10 per cent.; three months depositors, 8 per cent.; and transient depositors, 4 per cent. The Savings and Loan Society disburses a dividend of 12 per cent. per annum, free of Federal tax, out of the earnings of the past six months. At the close sales of Pacific Insurance Co. stock were made at $103@110 per share.

Mining Share Market.

Owing to the interruption of stock transactions during the period since our last similar reference, by the recurrence of our national holiday, the market has been confined to a few days' business; however, during that time the sales have been quite large and prices very fair, extending very generally over the list of the Board and including a considerable amount of White Pine stocks.

From our carefully compiled record of the sales in the San Francisco Stock and Exchange Board, we give the following interesting figures, for the first six months in 1866, 1867, 1868 and 1869:

MONTH.	1866.	1867.	1868.	1869.
January....	$2,727,187	$3,654,322	$8,638,934	$7,964,734
February...	3,752,282	3,303,520	9,716,596	6,818,644
March.....	5,226,084	4,034,288	11,471,830	6,954,145
April.....	4,034,096	5,389,918	12,385,304	7,286,211
May.....	3,052,102	7,651,855	10,162,396	6,961,913
June.....	2,406,341	6,964,365	9,078,063	6,336,337
Totals....	$21,275,102	$31,113,367	$61,513,123	$42,501,984

HALE & NORCROSS—met with a considerable demand at prices ruling for some time past. The ore extracted during the week ending July 3d, amounted to 1,321 tons, 547½ coming from the fourth station and 600 from the fifth station. During the same time 902½ tons were delivered to the reduction mills; on hand, 1,923½ tons. The fifth station will require retimbering, taking several weeks to do it; however, this will not interfere with hoisting from stations above. They intend to work sixteen hours and hoist from the fifth level during the remaining eight hours, which will not materially lessen the product. On the fifth station they are cross-cutting and developing the southern portion of the mine, which is reported to be looking well. The south winze which they are raising up from cross-cut No. 1 is in excellent ore at the height of fifty feet above the fifth level. In the old mine the cages are now running to the 900-foot station, and they are now re-opening the single east drift on that level. During the present week $32,145 in bullion came to hand. A dividend of $6 per share is payable on and after the 10th.

CHOLLAR-POTOSI—has been in good request. For the week closing July 2d, 1,660 tons of ore were mined, 700 of the amount being extracted from the Blue Wing locality and 960 from the New Tunnel. In the Blue Wing the faces of the stopes show more ore and of an improved quality. In other portions of the mine no material change is noticeable. They paid a dividend of $20 per share on the 7th. The aggregate yield of bullion for the month of June is $175,700.

GOULD & CURRY—has been quite active. The ore extracted during the week ending July 5th, amounted to 380½ tons. The bullion returns for June foot up $58,219. No important changes in the mine. The breakage of the crank shaft to pump gear has temporarily interfered with work at the seventh station....IMPERIAL shows a yield of $26,386 in bullion, and EMPIRE $15,277 during the month of June....SIERRA NEVADA pays a dividend of $2 50 per share on and after the 10th. Capital stock has been increased from $1,500,000 to $3,000,000, divided into 15,000 shares of $200 each. The office has been removed to room 15, third floor, of the Express building....GOLD HILL QUARTZ shows a bullion product of $6,074, and SAVAGE $89,500 during the month of June....OPHIR drift is 413 feet in length.

AMADOR (Cal.)—reports that in the new south shaft they have a bowlder ledge, on the west side of the "gouge," very similar to that in the north shaft stopes, and will pay from $6 to $8 per ton at a point fifty feet below the surface. This ledge is twenty-two inches in width, and together with the gouge (22 inches) and the main vein of sixteen inches, which pays from $18 to $20, they have a vein of five feet. Balance of the mine is looking as well as usual. A dividend of $8 per share is now payable....EUREKA (Cal.) disburses a dividend of $5 per share from and after the 10th....NORTH STAR (Cal.) levied an assessment of $20 per share.

We are indebted to the "Commercial Herald" for the following interesting

MINING REVIEW.

THE WHITE PINE MINES.

It being now nearly a year since the people of California began first to hear much about White Pine, and a little more than half that time since immigration and capital began to flow actively into that district, a brief review of its history might not, just now, be altogether inopportune.

One year ago, then, there were not above three or four hundred inhabitants within the limits of the White Pine District, a large proportion of these being mere sojourners. The population, up to that time, and for a month or two after, was somewhat transient—people coming and going—because, while the ores were evidently rich, and the surface deposits apparently extensive, they could not satisfy themselves as to their probable permanency. Then, there were no mills or reduction works there, except the small establishment of the Monte Cristo Company, fourteen miles distant from the mines. No towns had been built—Treasure City and Hamilton consisting of a few rude cabins, not exceeding thirty or forty in number. No roads had been constructed, nor were there then more than two or three lodes in the district at all developed. The bullion product had, up to that time, reached only a few thousand dollars, being chiefly the proceeds of Eberhardt ore, the most of which had been sent to Austin for reduction. As yet, not a sample of these rich ores had reached San Francisco, nor was anything known here of the wealth of White Pine, except what could be gathered from the vague rumors that had then begun to spread abroad. We then knew less of White Pine than we do now of a dozen other districts around it. In June, 1868, there were, probably, not over two or three hundred company claims recorded in this district—now there are more than four thousand; an increase not referred to as being a creditable achievement, or one likely to promote confidence in the district, the greater proportion of these locations being worthless, and not a few wholly mythical. During the months of June and July population increased slowly, and not much progress was made in improvements. In September more people came in, confidence in the mines increased, and every branch of business was marked by greater activity and energy. Roads, already laid out, were built, mills were brought in, and the owners of promising claims began to prospect the same on a liberal scale. No large sales of mining properties had, however, as yet been effected, and the prices of town lots remained at low figures. By the middle of October one ten-stamp mill, erected by General Page, at Shermantown, had been got in operation; and, by the tenth of the following month, another of like capacity, put up by Jeremiah Miller, was running at Hamilton. The starting of these mills gave a new impulse to business, and people beginning to flock into the district, and real estate as well as mining claims soon began to appreciate. By the middle of November a good many capitalists had already visited or were then collected at White Pine; and before the end of the following month a number of leading mines had been disposed of. During this period the Stanfords had bought the California and the South Aurora mines; and the Virginia, the Pocotillo, the North Aurora, Hidden Treasure, Featherstone, and several other valuable claims, had changed hands; the purchase money amounting, in the aggregate, to considerably over a million of dollars.

Toward the latter part of December the winter set in with great rigor, continuing, with but slightly interrupted severity, until the middle of May—seriously interrupting work in the mines, and preventing most kinds of out-door business being done to any advantage. During all this time—a period of four and a-half months—very little could be accomplished, not only on account of the cold and stormy weather, but chiefly because there was no lumber or other material for building, no fodder for stock, and but very limited supplies of most staple articles of food.

Throughout the whole of this inclement period, while the cost of living was enormous, and when little or nothing could be done, multitudes, disregarding the warnings against such a course given on every hand, rushed to White Pine, there spending their money and means, so that many were obliged to leave before the season for prospecting, or even seeing the mines to advantage, had arrived. These people, disappointed and disgusted with their experience, left the country, cursing its rigorous climate and denouncing the mines. In the meantime, thousands of worthless claims had been located, many of which the locators, taking advantage of the reputation of the really good claims in the district, managed to dispose of, generally for small sums, parties excited by the rich ores exhibited being disposed, notwithstanding they had often lost by this sort of venture, to risk a trifle where the chances seemed so good. And thus it happened that large numbers of persons became interested in a small way in these mines during the winter, when little was or could be known about them, to find, on the approach of spring, that they had nothing to represent the property purchased, except, perhaps, a thread of spar or a bunch of barren quartz. The deceptions practiced in this manner have lead to a wide-spread distrust of the White Pine mines, and done much toward discouraging investments in that region. It is an indisputable fact, however, that those who purchased properties at all developed, buying only on careful inspection, have in every instance done well, and could to-day realize two or three hundred per cent. on their investments, and in some cases much more. In fact, never before have men investing in any mines had more cause to congratulate themselves on their ventures than those who purchased largely and intelligently at White Pine.

Having shown how little had been accomplished in this district one year ago, we will briefly glance at the work since done, and the progress that has been made, as affording the best evidence of the enterprise and energy displayed by the inhabitants, and their confidence in the resources and future of the country.

There are, then, at the present time, ten quartz mills completed and running in the district. These mills carry an aggregate of 112 stamps, and, including sites, water franchises, etc., have cost a total of not less than $600,000. Three considerable towns have been built, many of the structures being of a capacious and substantial kind. At least 150 miles of toll roads have been constructed, at an expense of fully $150,000. Over 20 saw-mills and smelting works have been put up. Immense quantities of wood have been cut, and many thousand feet of lumber manufactured. A vast amount of work has been done upon the mines, from which eight or ten thousand tons of ore have been extracted. A magnificent system of water works has been projected and brought nearly to completion; besides which, a great many minor enterprises and improvements have been planned, and many of them executed; nearly all of which, it should be borne in mind, has been performed during the rigors of a long and dreary winter, with labor and all kinds of material at exorbitant prices.

In and about the mines and mills there are now employed about 2,000 hands, whose wages average $5 per day. About 3,000 tons of ore are raised every week, of which not over a third is milled, for want of reduction facilities. The weekly product of bullion amounts to about $120,000, with the prospect of being increased at least one-half within the next six months. The ore now being crushed averages considerably over $100 to the ton, each stamp crushing about a ton and a quarter per day. There have now been extracted from the White Pine mines very nearly $2,000,000, it being scarcely a year since the first crushings were made, and not more than six months since no more than three mills, all of small capacity, have been running on these ores.

THE COMSTOCK LODE, ETC.

In the Comstock mines no important changes have occurred during the period under review. In the Hale & Norcross ground heavy bodies of good ore have been developed, imparting a stimulus to companies prospecting for ores in their lower levels in the vicinity. The Savage and Hale & Norcross may be classed as the most successful companies on the Comstock during the past six months. The fire in the Gold Hill mines proved a more serious affair in a pecuniary point of view than was at first anticipated; not that it damaged the mines so seriously, but from the fact that it was so long before it could be extinguished, causing a stoppage of mills, product of bullion, labor, and business generally.

The product of ore from the various mines has been quite large, but the yield of metal per ton has been below what may be considered the average of last year. This, however, has been attended with a lessened expense, but not enough to make up the former aggregate profit per ton. The Carson and Virginia Railroad is being pushed with vigor, and will no completed within the coming quarter, an avant that will cheapen transportation, and allow most of the ore to be reduced by water-power, thereby enabling the working of ore which otherwise could not be made to pay for reduction. Outside mines in Storey and Lyon counties have contributed quite a large percentage of the ores lately reduced at the mills in that part of Nevada.

In California there has been less activity and change than in the State of Nevada, but at the same time a steady advance. The quartz interest especially has been quite active of late. In several of our more northern counties surface diggings have paid handsomely, and in a number of places old diggings have been rewashed with profit. In most places, however, the old surface diggings have fallen into the hands of the Chinese, who are now found in nearly every ravine and gulch in the gold-bearing region of the State, though it is impossible to form any correct idea of their gains, further than estimating their time at $1 per day, a Chinaman never leaving when he can make that sum daily.

The mining ditches that formerly yielded so largely no longer pay except in a few localities. The more extensive use of water for driving quartz mills will, however, gradually cause this species of property to appreciate in value.

The gathering of sulphurets carrying more or less of gold is gradually becoming a business of importance in surface mining. Formerly, when large quantities of water were used for sluicing purposes, it was impossible to save these sulphurets. But with improved facilities and cheapened labor, this business can now be made remunerative, the only drawback to a much more marked success being the difficulty still experienced in extracting the metal after the sulphurets are collected.

Quartz mining has made satisfactory progress during the past half year, the only thing required to insure the general success of this great industry being cheaper machinery and labor. With any material reduction in the cost of the former, men of small means would be enabled to carry on operations on a limited scale, gradually extending them as their ability increased.

A very considerable reduction in the cost of extracting the ores is likely to occur through the use of Giant Powder and the introduction of the single-hand drill, it being shown by actual trials carried on through several months that ore could be broken out with Giant Powder at a cost of less than one-half that attendant on its extraction by black powder. The principal objection urged by miners against the employment of this new explosive, that it is injurious to health, is considered untenable by many who have experimented with it on an extended scale. The late very general and long extended strike of the miners in Nevada country, without settling the questions at issue, viz: the introduction of the Giant Powder and the employment of the single-hand drill, has had a most mischievous effect in a variety of ways. Through this cause the laborers themselves have been thrown out of work and deprived of their earnings, while the mine-owners have lost the profits that they might otherwise have realized from the working of their ores. The product of bullion has been reduced, and business of all kinds in the vicinity has been made to languish; and, finally, the probability of Chinese labor being substituted for that of white men has been rendered imminent: a result that, however it might benefit the proprietors, could not fail to operate to the permanent injury of the white miner.

A difference of one dollar on the cost of raising and working a ton of ore has now become the determining question whether many of our mines are to be worked or to remain idle—a point that the use of Giant Powder and the single-hand drill will in many cases be able to settle in favor of a continuance of operations; a circumstance that renders the determination of this matter one of great practical importance.

It is the opinion of many that quartz mining is likely, in any event, to experience a decided expansion in California; the introduction of more effective methods of saving the metal, and the reduced cost of labor and machinery, coupled with a growing spirit of economy, tending to warrant this conclusion.

The smelting furnaces in the Cerro Gordo District, Inyo county, have been doing a largely increasing and profitable business of late, the crude metal accumulating to such an extent that it has been found expedient to erect refining works, so that the precious metals may alone hereafter be shipped, the lead being retained to await increased facilities for transportation. New companies have lately commenced the construction of additional furnaces in that locality, and it will not be long until California will be producing silver in notable quantities.

In Oregon, mining enterprise is being gradually extended, though not marked by any special activity.

In Idaho, less is being done in the department of quartz mining than formerly, owing, in part, to a large emigration from that Territory to the White Pine region, and in part to the recent disastrous failure of what was considered one of the representative mines of the country.

From Arizona, more encouraging accounts reach us this year than have emanated from that country for several years past; and as a number of companies have fitted out in San Francisco with a view to making a more thorough exploration of that Territory than has ever yet been made, it may be reasonably anticipated that important discoveries will transpire in that quarter before the season is over.

A new feature in the disposition of ores arises from the practice, now becoming prevalent in many parts of the State of Nevada, of sending large quantities of rich but rebellious silver ores by railroad to this city for reduction or a market; a method of disposing of this class of ores that will no doubt soon grow into general favor, in view of the satisfactory results that have attended these first trials. Thus far, more argentiferous ore has reached this city the present year than arrived during the last two preceding years.

JAMESTOWN, Cal., July 6th, 1869.

MESSRS. DEWEY & CO.—GENTLEMEN:—The Patent for our Ore Washer and Concentrator was duly received by express. We return you our thanks for the promptness and successful manner which have attended your efforts in our behalf. Yours, WM. G. HESLEP.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alpha Cons, Storey co., Nev., June 5, $5	July 10	July 31
Blue Rose, White Pine, May 31, 5c	July 10	August 1
Bullion, Storey co., Nev. May 22, $10	Payable immediately	
Brodt, White Pine, June 23, 25c	July 23	Sept. 4
Central, Storey co., Nev., June 23, $2.50	July 24	Aug. 14
Cosala, Mexico, June 19, $1.25	July 24	Aug. 12
Cons. Chloride Flat, W. P., May 28, $1	July 7	July 29
Cherokee Flat, Butte co., June 23, $5	Aug. 3	Aug. 18
Chester, White Pine, June 29, 15c	Aug. 4	Aug. 25
Cuba Cons., White Pine, June 24, 5c	July 24	Aug. 10
Cayuga Chief, White Pine, June 23, 10c	July 30	Aug. 10
Daney, Lyon co., Nev., May 29, $1.50	July 1	July 19
Daniel Webster, White Pine, June 30, 15c	July 30	Aug. 19*
Evening Star, White Pine, June 25, 10c	July 31	Aug. 21*
Gold Hill Q. S. Storey co., June 29, $1	Aug. 2	Aug. 23
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 26*
Hidden Treasure, White Pine, June 29, 50c	Aug. 4	Aug. 25
Hope Grave'd, Nevada co., June 29, $1	Aug. 7	Aug. 28
IXL, Alpine co., May 10, $1 50	June 25	July 14*
Julia, Storey co., Nev. May 27, 50	June 29	July 17
Kantuck, Storey co., Nev., June 14, $10	July 15	Aug. 3
Lexington, White Pine, May 18, 15c	June 23	July 12
Magenta, White Pine, June 30, 10c	Aug. 5	Sept. 14
Morning Star, Alpine co., May 11	June 21	July 12
Maxwell, Amador co, May 15, $1	June 15	July 15
Mammoth, White Pine, May 20, 25c	June 26	July 15
Magenta, White Pine, June 24, 10c	July 29	Sept. 4
Mahogany, White Pine, June 7, 10c	July 25	Aug. 13
Metropolitan, white Pine, May 26, $1.50	July 1	July 15
Noonday, White Pine, June 14, 30c	July 19	Aug. 9
North Star, Nevada co., June 4, $20	July 9	July 30*
North Star, White Pine, May 19, 7½c	June 18	July 17
Roche, White Pine, April 6, 15c	June 30	July 30
Pocotillo, White Pine, May 17, $1	June 24	July 15
Rainbow, White Pine, June 22, $1	July 27	Aug. 14
San Javinto, Tin, May 27, 50c	June 28	July 13
Silver Moon, White Pine, May 31, 5c	July 10	August 1
Silver Wave, White Pine, June 7, 20c	July 8	July 28*
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug. 28
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Aug. 26*
Virginia, White Pine, June 17, $1.25	July 26	Aug. 11
White Pine Water, June 23, $50	July 23	Aug. 16
Willimantic, White Pine, May 20, 20c	July 19	Aug. 10*
Yosemite, Humboldt co., Nev., July 2, 50c	Aug. 7	Aug. 24*

MEETINGS TO BE HELD.

Chollar-Potosi, Storey co., Nev.	Annual Meeting July 12
Chester, White Pine	Annual Meeting July 30
Evening Star No. 1, White Pine	Annual Meeting July 12
Kewaunee	Annual Meeting July 10*
North Virginia	Annual Meeting July 19
Rippon, Alpine co	Meeting July 15
San Fernando Tunnel, White Pine	Annual Meeting Aug. 2*
Savage, Storey co., Nev.	Annual Meeting July 15
Sedgely, White Pine	Annual Meeting Aug. 2*
West California, White Pine	Annual Meeting July 10
White Cloud, White Pine	Annual Meeting Aug. 2*
Yellow Jacket, Storey co., Nev.	Annual Meeting July 19

LAST DIVIDEND.

Amador Co., div. $8 per share	Payable July 3, 1869
Alpha Cons., Storey co., Nev., div. $2	Pay. June 19, 1868
Bacon, Storey co., Nev., div.	Payable June 19, 1868
Caney, preferred Stock, div. 1½ per cent.	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12, 1868
Chollar-Potosi, div., $20	Payable July 7, 1869
Eureka, div., $5	Payable July 10, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Golden Rule, Idaho, div. $5	Payable May 1, 1869
Golden Rule, Tuolumne co, div. 50c @ sh	Pay. June 26, 1869
Hale & Norcross, div. $5	Payable July 10, 1869
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 1, 1869
Keystone, Sierra co., div., $32	Payable May 6, 1869
Kentuck, div., $20 per share	Payable Jen. 10, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Amalgamating, div.	Payable June 15, 1868
Sand Spring Belt, dividend $1	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec. 19, 1868
Savage, Virginia, Nev., dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable July 5, 1869
Sierra Nev., Storey co., Nev., div. $2.50	Pay. July 10, 1869
Virginia & G. H. Water Co., Dividend, payable April 15, 1869	
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, July 9, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked.
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	86	87½
Legal Tender Notes	74½	—
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & int.	
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par & int.	
San Francisco City and Co. Sch'l B'ds, 7s, 1866	88	90
San Francisco City and Co. Bonds, 7s, 1862	88	90
San Francisco City and Co. Bonds, 7s, 1864	88	90
San Francisco City and Co. Bonds, 7s, 1865	88	90
San Francisco City and Co. Judg. Bds, 7s, 1863	88	90
San Francisco City and Co. Judg. Bds, 7s, 1864	88	90
Sacramento City Bonds	25	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds	75	77
Monterey County Bonds, 10s, 1850	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	—	60
Spring Valley Water Co	64½	64½
State Telegraph Co	22½	—
MINING STOCKS—WASHOE DISTRICT.		
Alpha	28	29
Baltimore American	—	—
Belcher	27	28
Bullion	—	20
Crown Point	54	54½
Cole (Va.)	—	8
Confidence	45	55
Consolidated Virginia	—	10
Chollar-Potosi	365	—
Daney	3	3¼
Exchequer	11	12
Empire Mill and Mining Co	50	70
Gould & Curry	112	113
Gold Hill Quartz	50	55
Hale & Norcross	137	138
Imperial	68	70
Julia	1¾	2
Justice and Independent	8	9
Kentuck	171	173
Lady Bryan	40	45
American	13	14
Occidental	22	—
Ophir	21	21¾
Overman	85	86
Segregated Belcher	10¾	11
Savage	94	94¾
Sierra Nevada	44	45
Union	—	—
United States	—	—
Yellow Jacket	63½	64
MISCELLANEOUS MINING STOCKS.		
Amador (California)	285	290
Aurora, White Pine	—	22
Eureka, (California)	—	225
Golden Charlot (Idaho)	42½	44
Silver Cord (Ideho)	—	—
Golden Rule, California	10	—
Mohawk (California)	—	—
Pocotillo, White Pine	2	6

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Tarshish.—*Miner*, Jnne 26th: Mr. Schwerin is having constructed under the snperintendence of an old placer miner, a set of slnices for the purpose of concentrating the soft Tarshish ore.

M. C. M. Co.—An old and experienced amalgamator offers to erect roasting furnaces for the Monitor C. M. Co's mill, which shall roast our ores and render them fit for amalgamation at an expense not to exceed $5 per ton; the M. C. Co. to accept and pay for the same when it is proved. The offer will be accepted, and the success of the plan will decide the long vexed question of profit from onr low grade ores.

Morning Star.—*Chronicle*, June 26th: Election of officers was held on the 17th. The present snperintendent, Mr. Gamble, is retained. He has received orders to get out all the ore in sight in the npper levels, and we hope to see the working force greatly increased as soon as the new officers get posted.

Mountain.—There is a change of rock, and better headway is the result.

AMADOR COUNTY.

The Keystone mill, of 20 stamp capacity, crnshes ont an average of ahout $25,000 per month.

Muletown.—Mining at this ancient burg is being carried on pretty extensively, and pays well. Many more claims that are believed to be good, wonld be worked but for the fact that they were located on the Seco grant, and miners are compelled to pay a tax before a permit will be granted them to prospect.

CALAVERAS COUNTY.

Lower Rich Gulch.—*Chronicle*, July 3d: The 16-stamp battery on the Palomo is kept at work day and night, the rock yielding fair returns. The lead increases in width and richness as the shaft goes down. Alexander & Co's mill never stops, and it pours a constant stream of the precious metal into the pockets of the owners.

Railroad Flat.—The main shaft on the Petticoat mine has reached the depth of 200 feet. Levels will now be run upon the lead and sufficient rock taken out to keep the mill in constant operation. Labor is being continued vigorously upon the various mines in the district with success.

EL DORADO COUNTY.

Georgetown.—Correspondence of Placerville *Democrat*, July 3d: The Eureka Co. have their 8-stamp mill and chlorine works completed, and will start up about the 6th. Wood & Co. have their machinery on the ground and are putting up a water mill. Other claims are working. Some very rich specimens have been on exhibition for some days, taken last week out of the Crane's Gulch claim.

KERN COUNTY.

McKneadney Mine.—Havilah *Courier*, June 29th: The miners made a clean up on Thursday. Eight hands, four weeks' run, worked about 70 tons, which yielded $2,950. The proceeds were appropriated to paying the back wages.

LOS ANGELES COUNTY.

The *Star* of June 26th says: We were shown this week specimens of silver ore from a vein near the line of the San Ymidio Rancho. The ore looks very rich. The lode indicates a breadth of several feet.

Near Fort Tejon there is a gold mine being prospected by Treadwell & Co. Should it maintain its present indications there will be a mill placed on the premises.

NEVADA COUNTY.

Empire Mine.—Grass Valley *Union*, July 1st: We mentioned on Tuesday that the Empire had started up, and that probably enough hands to fill the mine could be had within a day or two. Our hopes proved delusive. Yesterday a number of men were cautioned that if they persisted in working, misfortunes would befall them. So on Weduesday, only about half the men went down the shaft. The men are even afraid to tell the names of the parties who warned them. The labor of this place it seems is held nnder threats of violence, and we think it about time such things were stopped.

Same of 2d: The Empire is running ahead with both shifts full of men. This is rather an unexpected state of affairs.

At the Eureka yesterday, several car loads of splendid rock came to the surface.

Hartery.—3d: A clean up of one week's run of the Hartery mine was brought to Delano's bank yesterday, and made 196 ozs. 13 dwts. gold.

The *Union* of the 3d has a long editorial on the Empire mine and the strike. There have heen more threats. It places before the people of the town the serious question, "What shall be done?"

At the Cascades.—*National*, Jnne 30th: The Red Diamond Co. have completed their flume, 700 ft. long, and have commenced hydraulicing. They use 300 inches of water and employ five men. The Nevada Consolidated Blue Gravel Co. are making preparations for a general clean up. They are working 14 white men and 13 Chinamen.

Wisconsin.—This mine has not been affected by the strike, but has pnrsued the even tenor of its way, yielding good rock and giving employment to 60 men. Last week the owners purchased the Burnett machinery, consisting of a fine engine, 12-inch cylinder and 24-inch stroke, good hoiler, and hoisting aud pumping gear. This machinery has never been used.

Same of July 2d: In the Wisconsin, rock now taken from the fourth level, looks exceedingly well. Ben McAuley, at the Sebastopol mill, has just completed a crushing of 150 tons from the mine, from which $30 to $40 per ton was realized, including sulphurets.

Clean Up.—Same of 3d: The Higgins ledge, known as Frank Morse's mine, continues to pay well. A clean up was had yesterday after a run of less than two weeks, which panned out over $2,000, exclusive of sulphurets.

Celestials.—*Gazette*, July 1st: Abont 60 Celestials left Nevada yesterday for North Bloomfield. They are to be employed in extending the ditch of the Gravel Co. to Big Cañon Creek. The digging of this ditch is a great internal improvement. Without Chinamen, it would not have been attempted.

Empire Again.—Same of 3d: Notwithstanding the threats made against the workmen in the Empire mine, and the number that left in consequence, the mine is still running with a full complement of men. A good many of the workmen are from other points in the county.

Perrin & Co.—5th: We saw on Saturday a gold brick, valued at $1,019. It was the result of 46 loads of rock crushed at Jos. Perrin's mill, on Wolf Creek. The crushing previous to this yielded $30 a ton.

Mining Property for Sale.—The Union mine, with the boisting and pumping machinery, and the Forest quartz mill, are offered for sale.

PLACER COUNTY.

Letter to Butte *Record* of July 3d: At Damascus there are several companies just striking through to pay dirt, and everything is lively. The Mountain Gate claim has, through the labor of five or six men, yielded for the last four years more than the expenses of 30 men engaged in opening out a drift through another part of the claim. They have now finished the worst part of the joh, having two tunnels of thirty-odd huudred feet run into the mountain side.

SHASTA COUNTY.

Roaring River.—Correspondence of the *Courier*, July 3d: The three ditches traversing this section are now in good repair and cover some of the best placer mines to be found in the State. The best diggings are now found in the banks and bars from five to fifteen feet deep, and can be worked to the best advantage by blasting powder and bydranlic pipes. Now the supply of water is more abundant thau at any time during the past six years, and is sold to miners at eight cents an inch. There is any amount of unclaimed ground covered hy the ditches which will pay.

SIERRA COUNTY.

Progressing.—Downieville *Messenger*, July 3d: The work on the Hog Cañon quartz mill and mine is said to be progressiug rapidly. . .The Keystone Co. is puttin a new and larger pnmp iu their shaft. I understand tbat the last clean-up was best ever made at that mine....Wate given out at the Woodchuck mine.

TRINITY COUNTY.

Canon Creek.—Corresponder *Journal*, July 3d: D. Evans in' tend the Depinette ditch do about three miles, to Conr season. Should this ent' tbrough, it will make Cañon Creek, for the dit dreds of acres of good

TUOLUMNE COU

Rich Strike.—S 3d: J. W. Ander Curtis Creek, a f of quartz, bear week an assay of 96 ounces of gold and 24 ounces of silver to the ton. The lode is on Curtis Creek, below Algerine.

Another Chipsa.—A piece of pnre gold weighing 22 ounces was found in the old Daly claim at Columbia on Wednesday last.

Arizona.

Black Canon.—Prescott *Miner*, June 12th: The few miners at work in Black Cañon Creek, are doing well. A miner recently wrote to some friends here to go down there, as they conld make $6 a day; and many will go, as soon as the rains raise the water.

Black and Bradshaw Monntains have never yet been prospected. There is no trouble ahout finding diggings in this country; the trouble arises in the working of them. Large parties cannot agree among themselves, and small parties dare not stop long in one place, on acconnt of the Indians. When the time comes that two or three men can, with safety, start out alone, and work, then will come flush times.

Items.—Work on the Sterling goes on as usual....Gennuy's arastras were running on Montgomery ore at latest accounts.... The Vulture is yielding plenty of ore. Both mills are at work....The White Picacho is to be worked....Gray & Co. will soon start their mill at Big Bug.... Geo. Lount has, he thinks, discovered the reason why the Paul & Wood process failed on Chase ore....A. French iutends to rent a mill on Lynx Creek, and work surface ore.

Bashford Co.—This company will cut a ditch to carry water into the gulches back of the old Mexican camp, on Lower Lynx Creek. They will take the water from a creek that empties into Lynx, near the old French diggings. The Mexicans merely skimmed the bedrock in the gnlches.

Independence Mine.—Same of 19th: On the 12th, the shaft was down 25 ft.; the lode 12 ft. thick, and the rock rich in free gold. About 100 tons of rock were on the surface, which Mr. Boggs says he intends working in arastras. He brought over three ounces of amalgam — worth $30— which he got from 40 lbs. of rock.

Montgomery.—The news from this mine is cheering. Geo. Monroe says the wheel and arastras work well, and the rock was the richest he had seen in the Territory.

Black Cañon.—Mr. Branerman has informed us that the miners in Black Cañon Creek, worked in the diggings as long as the water lasted, and made very good wages. He weighed, for one miner, 1¼ pounds of gold.

Lower Lynx Creek.—Joseph Revoirs and partners have averaged $7 a day each, in their claim. They are now waiting for water.

Walker's District.—Ed. Bowers, Supt. of the Wells Hydraulic Co., has completed one mile of ditch to carry 500 in. of water, and one-half mile which will carry 300 in. A large reservoir, in Rich Gulch, will soon be finished.

Henry Herbert, an old Nevada County, Cal., miner, had found prospects below the cañon—that warrant the belief that the har will pay $7 or $8 per day to the hand. Uncle Billy Pointer was working on his lode, and taking out very rich rock.

Colorado.

Bullion.—Central City *Herald*, Jnne 16th: Warren Hussey & Co. had three retorts on their counter last evening, one of 105 ozs. from the Jones, one of 92 ozs. from the Bobtail, and a large one from the U. P. R., besides a number of smaller ones, in all about 600 ozs., all of which came in during two or three days.

New Lo -Richard Snaire and another
man hav new lode, and called it
the Kn t is 200 yards north of
the P att is 30 feet deep,
and 3 to 5 inches,
wo
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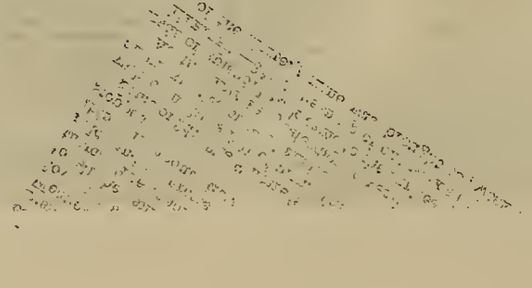
ft



are of the opinion that the richest and strongest vein has been missed entirely in running the drift east from the main shaft. The mine, if properly worked, ought to give employment to a large number of miners. The Central Gold Mining Co. is one of the corporations whose operations have been disastrous to the stockholders and a curse to Gilpin county.

Georgetown Items.—Mr. Burleigh has returned from the East, and will push the Burleigh tunnel with vigor....The Baltimore Co's tunnel above Brownsville is going into tbe mountain two feet per day.... Stewart's works are in full blast, turning out from 1,800 to 2,000 ounces of silver per week, running on Equator ore for the last three weeks, and in a few days will again commence on ore from the Terrible mine....Saw a 1,500-ounce brick from Clark & Co's bank, yesterday, from Stewart's, out of Equator ore....Kurtz's Concentrating Works are approaching completion.

The *Register* of the 22d says: Professor Hill's works are sending up the smoke of their burnings continually....The Teats mine never looked better than to-day. A large force is at work taking out the best ore ever produced in Colorado. An assay made a few days ago hy Von Shultz gave $29,000.

Idaho.

Big Clean Up.—Idaho City *World*, June 24th: Doc. Noble, Saunders, Elkins, Noble & Alderson, on Buena Vista Bar, last Saturday, after a run of fourteen days, cleaned up nearly $5,000.

Keystone Ledge Ore.—Bailey Simpson showed us some ore from the Keystone ledge, which had been roasted in a forge, and showed silver all through.

New Quartz Ledge.—We learn that a ledge was discovered Saturday, near Democrat Gulch, which prospects richly, and crops out an average width of over three feet, so far as traced, a leugth of two miles.

Bullion.—Silver City *Wave*, July 2d: Wells, Fargo & Co. shipped during June, from their office in Silver City, $96,320 coin, equal to $128,426 currency. We know of shipments by private hands amounting to several thousands, that will swell the coin value perhaps to $110,000.

Moose Creek Mines.—A. C. Wellman writes the Walla Walla *Statesman* of June 18th from Pierce City, that "there are only about 40 claims that pay anything at all, and even these cannot be worked but a short time longer on account of water. Ditches are being brought in, hut it will take all summer to complete them. Before the claims were opened the prospects were very flattering; one, two, three, and even $20 was got to the pan, but the leads, after working, have proven to be very narrow and spotted. The basin is low, yet diggings are well np to the head of the gulches, making natural water scarce. The largest week's work yet made was 48 ozs. to two men, and the largest nugget $117."

Warren's Diggings.—The Walla Walla *Union* says: Warren's diggings are badly off for paying placer claims, though they have some good paying ledges and two mills running. A discovery has recently been made in Jaw Bone Flat, near Lewiston, but requires a ditch at a cost of about $15,000 to be successfully worked. The probability is the ditch will be brought in.

Nevada.

COPE DISTRICT.

The *Enterprise* of June 29th gives a notice of this new mining region, having obtained items from Col. Frank Denver, just returned. We condense: "The mines are favorably situated for working, and the leads of good width. The ores are sulphuret, chloride and ruby silver. As yet but little work has been done. Col. Denver and party stripped the ledge for a distance of 300 feet, and found it to be on an average 5½ feet in width. Three hundred pounds of ore from this lead worked at the Miners' Foundry, San Francisco, yielded $420 per ton.

They have laid out a town called Mount- ity, on the banks of the Owyhee n the town and the valley there 300 persons. In the vicinity ower sufficient to run 1,000 er of the district is 20 line.

way to Mountain nines 20 miles in which is found. s to s

great source of revenue to its owners; but that outside of this, others have have not as yet been discovered.

The Elko *Independent*, June 30th, says the daily reports are encouraging. It gives also a letter from Bull Run, a new district due north from Elko, with ledges said to be like those of White Pine. The same speaks of rich discoveries on the east side of the Ruby range, and great excitement among the ranchers.

HUMBOLDT.

BATTLE MOUNTAIN.—Correspondence of the *Enterprise*, July 1st: "Beyond doubt, these are the richest and most extensive copper mines in the State, averaging 40 per cent. copper, and, in some instances, from $6 to $20 in silver. A number of companies have been organized in the Eastern States and England to develop them, some of whom are now delivering ore at the station for transportation by rail.

There are silver-bearing veins in this district, which are considered very valuable, among which the Little Giant is most prominent, paying a profit from the beginning, without capital. It is owned by A. P. K. Safford, Geo. W. Fox, Roht. McBeth, and John Mellander. The company have a 5-stamp wet crushing steam mill, complete in every particular. Several tunnels have been run on the vein, the lower one exposing the ledge to the depth of 250 ft., showing more ore than the mill can work in one year. I find that the average yield of this ore, up to this time, is $186 per ton; the hullion showing no gold, and averaging .994 fine in silver, bringing a premium of 2¼ per cent. The average width of the ore is about 16 inches, and is all milled without sorting.

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

OCCIDENTAL MINE.—*Enterprise*, July 2d: Good progess is made in the lower tunnel. The rock is becoming softer.

SIERRA NEVADA.—The Sierra Nevada are still taking out large amounts of rich ore, and their mill of 20 stamps is pounding away day and night.

FLOWERY.—The mine is looking well, and fine ore is being extracted at both the shaft and tunnel. They keep their mill in constant operation.

JULIA.—The Julia Co. are going ahead with their shaft.

OPHIR.—Same of 4th: The Ophir Co. are making good progress with their shaft to the westward.

SACRAMENTO.—The mine is yielding a considerable amount of good milling ore. The summit mill is running on ore from the mine.

DIVIDEND.—The Chollar-Potosi yesterday declared a dividend of $20 per share, payable July 7th.

Virginia City correspondence of the *Herald*, dated July 3d: The Yellow Jacket Othello Co. have decided to erect their 10-stamp mill, now on the road from Elko, at Swansea.... *Telegram*, June 26th: The Logan mill in Swansea is fast approaching completion....Mr. Mosheimer's smelting works at Swansea will be in complete running order in from 10 to 12 days. The capacity of the furnace will be 10 tons per day. They have now a large amount of ore upon their platform, and more arriving daily. A great deal of the ore is about 70 per cent. lead, carrying from $40 to $50 of silver per ton.

OUTSIDE DISTRICTS.—TEM PIUTE.—Parties are negotiating for the Crescent mill. This mill was built two years ago by New Yorkers at a cost of $75,000, and has never run a single day. It is within 15 miles of the district....One mine has been opened which shows chloride from one end of the face to the other....Ely District is 140 miles southeast of Hamilton. A letter to the *Empire* of June 29th says: "Our mines are well-defined, and pay from the top down. We have milling rock and smelting ore in abundance. In the Pioche ledge they have gone down over 40 feet. We have a furnace for smelting ores capable of working from three to four tons per day. The district possesses plenty of wood. We have good springs of water." ....*Telegram*, June 28th: Assays of ore from the Oro Fino ledge, Sacramento district, gave $376 in gold... In Robinson district, Sam. Brannan is digging wells. The ores assay up to $200. Most of them will have to be smelted.

ITEMS OF MINING PROGRESS.—*News*, June 24th: Ince Hall's mine is turning out rich ore....Snow having disappeared from Metal Range, miners must leave for the present, having no water....The Whiteman and Loneman mine, has a shaft down 78 ft., which followed a fine hanging wall all the way....Same of 28th: The Alturas and Industry mines were connected on Thursday by the former breaking through. Saturday the Posthole broke through into the Alturas, and the latter's title not being as old as that of the former, the Alturas surrendered its ground. The Posthole did the fair thing, gave up all the rock extracted by the Alturas Co., and purchased the tools used in that shaft....Giant Powder is used on the John Dare....Twenty tons of ore was sent yesterday to mill from the Pocotillo, by pack mules....The Addington struck it on Saturdry....The Nevada (Treasure Hill Mill and Mining Co.,) Industry and Posthole mines have come to an amicable adjustment of title....30th: Pennsylvania started up yesterday....The Dorin has struck ore assaying from $236 to $722 per ton, at a depth of 38 ft....July 1st: The Mammoth has purchased the Shehoygan....Ore assaying $1,900 has been taken from the Excelsior mine....*Empire*, June 27th: One hundred and twenty-five tons of ore from the Rattler mine, crushed at Dunn & McCone's mill last week, yielded $19,040, or $152.32 per ton.

an abundance of ore and the mills to work it.

Oregon.

CANON CITY.—Dalles *Mountaineer* correspondence, June 9th: The Prairie Diggings Co. has a good ledge, an excellent mill, and fine water-power,—and is making good dividends.

WILLOW CREEK MINES.—The Portland *Oregonian* of June 19th, says: The mines on Willow, Birch and Camp creeks prospect finely, but the want of water halks all profitable enterprises. During this season the great ditch will probably be completed, and it is expected that next spring will open with more favorable prospects.

Wyoming.

ITEMS.—The *Sweetwater Mines*, June 23d: Mason & Co. are prosecuting work with vigor on their quartz mill on Little Hermit Creek....Pease & Co., of Atlantic City, are extracting ore from the Caraboo to be crushed in their arastra....There was a rumor on the street yesterday that placer diggings had been discovered a few miles from here that would yield 40 cents to the pan....James Mills is driving ahead the work on his quartz mill....The Confidence ledge shows free gold in abundance. There is a shaft down eight feet, and a vein of quartz over five feet in width....Ledges, and rich ones too, are daily being brought to light that have been trampled over thousands of times. The custom mills that are in course of construction will soon be ready to crush any amount.

ITEMS.—Same of 26th: Mr. Mill's mill is going rapidly forward. Kitter & Mason's mill, on Little Hermit Creek, is also progressing. Mr. Anthony's mill at Atlantic City, is completed, and Rice & Co's mill will soon be crushing....Hunt and Daniels on Cariso Gulch, cleaned up yesterday. Amount not known, but big....Rock Creek claims are paying better than was expected. ....Thos. Collin's 20-stamp mill is on the road from Chicago....We were shown quartz this morning from five ledges discovered on the 15th. The rock is sticking full of free gold, and we are told that as far down as they had sunk, gold was visible. These ledges are four miles from South Pass, and three from Atlantic City, up Rock Creek.

Horace Greeley on Patents and Copy Rights.

"Sir Walter Scott barely escaped dying a bankrupt, when one cent per volume from his American readers would have saved him from pecuniary embarrassment, smoothed his downhill of life, and perhaps enabled him to live longer and write more and better. I wish we had rendered him naked justice.

As to the abolition of the Patent system, which has of late been influentially advocated, I shall be more easily reconciled to it [illegible] be swiftly followed [illegible]hts of property [illegible]of all legal [illegible]h rights. [illegible]all re- [illegible]ld,

Chemistry of the Stetefeldt Chloridizing Roasting Furnace.

Written for the Mining and Scientific Press.
BY G. KUSTEL.

The mechanical part of the roasting of silver ores in Stetefeldt's furnace is so simple that the whole manipulation is explained in a few words. The principal point is the maintenance of a uniform fire in two fire-places, and a certain degree of pulverization. The ore must be carefully mixed with salt of equal fineness, which best accomplished by crushing the ore together with the salt. The hopper is continually charged with the pulverized ore. The feeding is done by machinery, with great precision, by an improved arrangement.

The chemical proceeding of the chlorination is very interesting. At the first glance it would seem that, considering the short time of two seconds in which the falling ore is exposed to the flame, a perfect chlorination could not take place, especially if compared with the known facts apparent in the common roasting furnace—that is, that sulphurous acid is first formed under influence of a dark red heat, by aid of the oxygen of the air, while the metal, deprived of its sulphur, becomes an oxide. The oxygen of the air and of the oxide act on the sulphurous acid, converting it into sulphuric acid, which again combines with the metal oxide to a sulphate. The sulphate reacts now on the salt, setting the chlorine free, and the formation of chlorides begins.

This reaction and transformation requires time, which is not offered in Stetefeldt's furnace; but the chlorination is effected nevertheless, and very perfectly, with less salt, and in a few seconds. The chemical action in Stetefeldt's furnace is as follows: As soon as the ore enters the furnace, each sulphuret particle ignites, being surrounded by a glowing atmosphere; evolving at the same time sulphur, which, in presence of atmospheric air entering undecomposed through the grates, is converted into sulphurous acid, and the metal into an oxide. In contact with ore particles and oxygen, the sulphurous acid becomes sulphuric acid. This acid does not combine with the metal oxide to a sulphate, as is the case in a common furnace, or if so, only to an insignificant degree, on account of the temperature, which, nearly from the start is too high. The sulphuric acid therefore turns its force directly against the glowing salt particles, setting free the chlorine. All these reactions are, so to say, in *statu nascenti*. From the burning fuel some steam is present among the gases, giving rise to the formation of hydrochloric acid. The whole space of the furnace is then filled with glowing gases of chlorine, hydrochloric acid, sulphuric acid, sulphurous oxygen, steam, and volatile base chlorides; all of them acting de- and composing on the sulphu- les with great energy. The ses the sulphurets direct- of metal and chloride ses and combines hates. The hy- e. The sul- salt and oxygen and

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W. B. EWER.....SENIOR EDITOR.

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San Francisco:

Saturday Morning, July 10, 1869.

Notices to Correspondents.

Crystal.—Professor W. K. Sullivan found that crystallized gypsum heated with water in a sealed tube to a temperature of 150° Centigrade, lost part of its water, and formed the hydrate 2 (Ca O SO_3), + HO; when beated for several hours at a temperature of 200° C., tbe gypsum became completely dehydrated. Several of the zeolites, beated under similar circumstances, were also dehydrated, but required a much bigher temperature and a much longer exposure to heat than required to dehydrate gypsum.

Tide Mills, Humboldt.—By the estimation of Bessel, 25,000 cubic miles of water, flow every six hours, from one part of the earth to another. The mechanical force so exerted diminishes the amonnt in store by a like quentity at every tide which is converted into heat, and thus adds to the temperature of the globe.

J. H.—The influence of the Gulf Stream on the climate of Ireland generally, but its S. W. coast particularly, is such that the arbutus flourishes as well there as in the uorth of Spain and Portugal; and Dr. Lloyd of Dublin reports as the resnlt of a series of day and night experimonts, that the temperature of the sea off the west coast of Ireland is four degrees higher than the mean temperatnre of the adjoining land.

Peuruddock, Silver City.—The decpest mine in Cornwall in the year 1857, was the Fowey Censol's copper mine. At that time it was 328 fatboms (1,968 feet) deep from the surface, and 298 fathoms below the level of the sea. At the same period it was calculated that all the levels on the course of the lodes amounted to 153 miles. Of the cross courses or levels N. and S., twenty-two miles, and of the shafts, seven miles, or a total of underground workings aggregating 182 miles.

Another Manufacturing Establishment Burned Down.—The Pacific Wood Preserving Co's works, northwest corner Ritch and King streets,—usiog tar to inject into the fiber of wood, and whose business operations were just beginning to he very extensive and promising,—have this week met the misfortune of the Pioneer Fuso Factory of last week—total destruction by fire caused hy the uuusually combustible material employed. Origin: the bursting of a retort, which let the tar into the furnace. Loss, $20,000, without insurance. Great castings for this company were noticed by us in connection with the Vulcan Foundry several weeks ago. Very little delay will be occasioned before the uew apparatus will be set up in working order. Sand reservoirs are to be provided, so that in case of a similar accidèut the fire can at once be smothered.

Numerous elegant dwellings are being erected at Shermantowu.

METALLURICAL.

Milling.

Amalgamation with the varied and excellent California foundry improvements and attachments thereto, is usually comprehended under this misused word, which is properly to be regarded as the popular coinage responding to a demand for some handier word than "beneficiating," or "*zugutemachen*"—in which it seems the French, Spanish, and German langnages are as badly off as the English. "Milliug" would be an excellent word if beneficiating or amalgamating were purely mechauical, as is the case with free gold. Where chlorides are first formed, and iron or copper come into play under fixed laws of chemical eqnivalents, "milling" should not be a mere working by recipe as bousewifely girls are wont to do in baking a pie; yet such is too generally the signification and the practice.

"A. B.," a Ceutral City, Colorado, correspoudent, writes:

"I notice in the Mining and Scientific Press various kinds of machinery for working silver ores. If it is not asking too much, I sbonld be pleased to receive from you your opinion as to the best mode of working what is termed refractory silver ores; the best crusher, the best pulverizer, what amalgamator is considered the best in your country; also roaster, etc."

From every quarter the word comes that this subject is of an importance above all others, even to the existence of entire settlements; and invariably it is the *cost* and *percentage* to be obtained, that presents itself to tho science of the practical metallurgist. Good resnlts, where the results are bullion, call for the keenest practical intelligence and enlightenment with all the aids of the books and of new experiments that are to he bad. "Our greatest need," says the Portland *Oregonian*, "in connection with our vast mineral resources, is that kind of knowledge that will enable us to work our mines with the largest profit; aud for the want of this many mines are abandoned which in Europe or elsewhere would be worked with success."

"What we want," says the Austiu *Reveille*, "is some cheaper way to work our ores. Until this desideratum is attained, no exteusive mining need he expected in this portiou of the State. Forty-five dollars a ton for crushiog and amalgamating, with twenty per ceut. deducted from the pulp assay, together with the bullion tax, brings the price of milling our ores to such a figure that an embargo is virtually laid on every ton of ore the pnlp assay of which is less than $100 per ton."

The cost of working ores and the percentage of bringing-out vary so greatly in different regions aud on different ores, *depending always upon their mineral composition and gangue*, that it will, of course, be impossible to reply to "A. B.'s" inquiry in a general way. Weekly repetitions of data of cost, from everywhere, are to be found under "Mioing Summary." This varies from $3 to $50 per ton iu amalgamation and wet extraction, the tools depending always upon what is sought to be done, or the process. If coarse pieces will do, as in smelting, the jaw-crusher is best; if it must bc fiuer, the rollers; if pulverulent, the stamp mill, or somo of the grindiug machines or paus. Varuey's pans will take ore from a quarter-iuch screen and deliver it, fully prepared, to his amalgamating pans. Hephurn's new grinder and amalgamator will take ore from a three-eighths of an inch screen, and grind and amalgamate it in about tho same time as the usual pans do from a No. 6 screen. Hunt's grinding cylinder will take ore from a quarter inch screeu, and griod it to impalpable powder iu the timo usually taken to do the same in pans, but mnch more regularly.

To reduce from coarse to fine, a crusher, rollers and stamp mill (or grinder, depending upon the harduess and brittleness of the ore and gangue,) may follow each other. To do *all* economically, nothing but the stamp mill has thus far answered. Howland's circular stamp mill is a well-devised modification, having tbe advantage of compactness for transportation and extreme simplicity,—described in the Press of March 6th, 1869. Wbere jigging is not practiced for concentration, rollers are of less importance. Probably no one thing conld be mentioned that would do more towards making low-grade ores pay good dividends in this country than the introduction of improved sieve concentration processes, practiced in all older mioing countries, on the principle of the Coruish "jigging."

By the Hepburn pan, supplied with thirteen sliding disks, it is claimed that $7 and $8-ores can be worked at a profit—at a cost of $3 per ton—the large amount of exposed ruhbing surface being the cbaracteristic feature, and having the quicksilver so arranged underneath as not to he mechanically floured by grinding. Two tons, we are told, can be worked at a charge witb two-horse power.

This appears to be the best of the grinding pans; it is adapted for use after crushers that reduce to hickory-nut size, on ores that amalgamate easily raw, without preliminary chloridizing, and where scarcity of water renders dry crushing preferable.

Dry amalgamation by the Paul & Woods process has run for a sufficient time now to be pretty satisfactorily tested; and Mr. S. A. Chapin of the Twin mill, Silver City, N. T., certifies that he obtains ninety per cent. where in the ordiuary pan there could be obtained only sixty per cent. This is the simplest of all processes. Dry pulp (1,000 pounds), is iutermingled with one-third its weight of quicksilver in an iron harrel 38x48 inches, for four hours, under moderate warmth—less than the vaporizing degree—at twenty-six revolutions per miuute. So very miuutely is the quicksilver found to be mixed with the pulp that it is not perceivable with the naked eye, yet by simple agitation in water it is settled and collected without difficulty, according to the statement. Theoretically, neither ore nor quicksilver is wasted. It is alleged that sulphuret, antimouial iron, lead and copper ingredients, do not interfere, but stand by and see fair play; though it would seem that chemical decomposition and re-affiliation must include in the play some of the base metals, or there is something very mysterious done iuside of this iron barrel. After further trial, we shall probably learn that the process is most favorable to certain ores or combioations of ores and gangues in places where there is little or no water.

Smelting.

Whatever processes may be best suited to locality and circumstancos where the ores are fahl-ore, grey copper, stetefeldtite, or the red and black antimonial silver minerals, for which modified amalgauation is generally practiced, and is in most cases the cheapest; for the sulphurets, carbonates and oxides of lead and copper, or ores containing more than fifteen per cent. of those minerals, there need be no hesitation about pronouncing in favor of smelting. There are wet copper extraction processes—like that tried by Ramdohr at Virgiuia City—adapted to low-grade ores for copper alone, which is brought into solution as sulphate, aud precipitated by "iron spouge;" bnt wet copper extraction on low-grade ores does not appear to be thriving at present anywhere hut on the Rhine.

Many ores have heeo pronounced smelting ores ou this coast which can bc successfnlly and more economically treated by other methods. Because ores are "refractory" with quicksilver under unskillful hauds, it is not necessary to conclude, therefore, that smelting will bc necessary.

Are there any smelting ores at White Pine? There have been formed six or eight smelting companies on that supposition, answering the question iu the affirmative. But without ores richer than the carbonate of lead found there, and without water to concentrate, tbe task, it would seem, should not be hastily undertaken. The base metal ores there generally contain more than fifty per cent. of lime or quartz, or other earthy material. The "smelting process" ougbt certainly not to be held responsible for failure in smeltiog raw ores of such a character—unless the veritable nuiversal flux could be taken advantage of. A proper slag,—from singulo to bisilicate,—is, of course, of the first importance; involving precisely the same principles and method of procedure, chemically, as solubility in the wet way, and being based on a similar relationship of the alkaline to the acid ingredients—of lime to quartz in this iustance, the chemistry by fluidity of fire being qnite the same as by water. What makes smelting difficult is, that no recipe can be given for it: the smelter should be aware at every step of what he proposes to effect.

The cost of smelting at hest is not a trifle—is more likely to be above $75 to the ton than less; *vide*, our reports of Belshaw, Desmerenx, and Aaron's results at Lone Pine. Stetefeldt, at Eureka, Nev., could not do it for less than $80. Calculations must not be based on small and favorable samples. The following table, made by Frederick Brunckow, a practical engiueer (subsequently killed by Mexicau robbers), sbows that where labor was cheap, smelting still cost $89.92 per 3,000 pounds =$60 per ton. The comparative figures of patio and barrel amalgamation are sufficiently striking. It is a statement of the cost of reduciug 3,000 pounds of silver ore by processes adapted to the several kinds, at the Real del Monte Company's reduction establishments at Sanchez, Velasco, San Miguel and Regla, Mexico, in 1854; the average yield of the principal ores being $800.

At Sanchez, Velasco, or San Miguel, the Barrel Process is used; at Regla the Patio amalgamation and smelting.	BY BARREL AMALGAMATION AT			*Bypatio Amalgamation at Regla*	*By Smelting at Regla.*
	Sanchez	*Velasco*	*San Mig*		
Stamping, mostly for labor	$ 64	$ 59	$ 60	$ 26	$ 30
Wear of Stamp-heads	24	25	88	28	28
Grinding in arastras, labor mostly	78	70	08	83	.....
Drying and lifting, mostly labor	1 30	1 20	1 02	.....	.....
Calcination, mostly labor (fuel below)	2 15	1 76	1 57	.....	.....
Amalga'n in barrels and patio, labor	1 41	1 04	88	3 98	.....
Smelting in furnaces (fuel below)	.....	.....	.....	.....	17 80
Wear of barrels	35	30	21	.....	.....
Distilling Amalgams. Casting silver bars.	08	10	07	05	04
Repair of machinery, furnaces, etc	33	60	50	48	3 90
Sundry costs	55	30	40	30	3 40
Fuel, wood	3 79	3 31	4 27	.....	1 00
Fuel, charcoal	31	30	27	20	34 90
Salt	6 70	5 37	6 60	3 64	.....
Sulphate of copper	.....	.....	.....	2 13	.....
Litharge	.....	.....	.....	.....	21 50
Tallow and oil for machinery	33	37	29	10	.....
Quicksilver	2 15	2 39	1 53	4 32	.....
Steam power, mostly fuel	1 91	4 23	.....	.....	.....
Animal power, mostly forage	2 14	.....	.....	.....	.....
Salaries, assaying, & Exp. of manag'm't	1 31	1 14	1 03	1 09	6 80
Total cost of reducing 3,000 lbs of ore	$26 47	$23 95	$20 25	$17 76	$89 92
Mean produce of silver for 3,000 lbs ore	92.88	94.80	62.40	65.92	518.40
No. of cargas (300 lbs) of ore reduced 1854	48.310	53.895	49.184	37.982	2.386
Ozs of quicksv'r lost per $8 silver saved	4.79	4 97	5.28	12.71	

Ramie and Kindred Textile Substances will he nnder consideration this (Saturday) evening, before tho Polytechnic Society of the Mechanics' Institute,—a paper having been prepared with care and with the advantage of some experience, by Dr. Silver,—wbile membors or visitors who have experience or information on the subject of textile fabrics, will probably add to the interest of the bearings of that important subject.

"Las Minas" furnishes somc notes of miues on Treasure Hill, which will appear next week.

Another Test of Barlow's Anchor.

On Thursday last a number of nautical gentlemen and others connected with the press, were invited to witness, from the steam revenue cutter Wyanda, a trial of the new anchor lately invented by Mr. E. T. Barlow, of this city. The Collector of the port having kindly given permission for the use of that vessel for the purpose, she steamed out to a locality in the Bay just beyond the Dry Dock, where the anchor was let go in the soft mud, holding the steamer firm to her place, against a strong wind, acting in conjunction with the tide. After holding awhile, the steamer was backed, at a rate of 50 revolutions of the screw a minute, under which tension, the anchor dragged in the soft mud; but again held her fast as soon as the engine was stopped. The anchor was then taken up, and again let go at a point near the Potrero shore, just beyond Long Bridge, where the same results were obtained.

Some idea of the holding capacity of this anchor may be formed from the fact that it weighs only 595 pounds; while the smallest anchor, of the ordinary construction, employed on board of this cutter, weighs 1,400 pounds—she being a ship of some 300 tons, new measurement. This anchor is quite novel in its construction and appearance, having no stock, while the shank consists of two parts, sliding upon each other, and held in place by two pivots, one at the ring and the other at the crown. It is so arranged that both flukes take the ground, instead of one. It is by the application of this principle that the inventor is able to dispense with about half the weight of iron to secure the same holding power obtainable from the common form of anchor.

There can be no doubt whatever of the great superiority of this anchor on small vessels, say below 800 or 1,000 tons. Experience alone must determine its success, when heavier masses of iron are put into this shape for holding larger ships. What has already been demonstrated renders it a matter of earnest desire with many, that the anchor should be submitted to a thorough trial, under all conditions and for the largest class of vessels. If an anchor can be made with one-half, or even one-quarter the metal now employed, to render equally effective the present form of anchor, the fact is one of great commercial importance. The Admiral commanding the Navy Yard, and other officers of the navy, have at a previous trial, pronounced this better than an ordinary anchor of equal weight. It was the testimony of Capt. Bailey commanding the Wyanda, and the nautical gentlemen present at the trial on Thursday, that Mr. Barlow's anchor, which in this instance weighed 598 pounds, was fully as effective as one of the ordinary make, being 1,000 pounds. In view of these facts, and this testimony, we trust that some one will have the enterprise and energy to put a little capital against Mr. B's ingenuity, and hereby possibly introduce a new, efficient and economical anchor, and in so doing, secure a future for themselves.

Lectures by Miss Dickinson.—Lovers of popular lectures will receive the announcement of the course of lectures in this city by Miss Anna E. Dickinson with pleasure. The great interest which has invariably been manifested in her speaking throughout the Atlantic States, has created a strong desire in the minds of intelligent people of this coast to listen to her celebrated lectures. We shall expect to see crowded houses, and from our own experience we are quite sure that all who attend will be richly rewarded for their presence. Miss Dickinson is an earnest friend of the mental and physical welfare of the working classes, and speaks in an independent manner of their rights and follies. The subjects of her first course are as follows: Monday evening, "What Next;" Wednesday, "A Struggle for Life;" Friday, "Nothing Unreasonable."

New Books.

The New West, or California in 1867-8, by Charles Loring Brace. New York: Putnam & Son. 12 mo. pp. 373.

Mr. Brace has a wide personal acquaintance as a working philanthropist, and is not only a very amiable person but the author of a number of works of excellent quality and possessing a tone that seems to agree well with the man; such as "Home Life in Germany," "The Races of the Old World," "Hungary in 1851," etc. In this book he has used his own traveler's sense, and good taste, with all the aid of existing published information regarding our resources, in giving his own impressions touching such questions as have a bearing upon the problem of making in rural California a home. To old residents even, the work contains much suggestive matter, as it discusses many questions brought to a more practical issue in our midst since the completion of the Pacific Railroad, though containing in the main matter that has been seen by most readers in another shape. Some of the more original chapters are on "The Effect of Climate on Race in California," "Where to Settle in California," "Professional Robbers," "The Chinese," etc.

Bancroft's Guide for the Pacific States, for travellers by railway, stage, and steam navigation; comprising routes and modes of travel, distances, fares, descriptions, maps etc., etc.

To live in the blessed 19th century, the age of inventions and communication by steam, is not to exist within one narrow horizon for half a life-time without a break; but steam having given us wings, we are like birds of passage and flit whither we list, for pleasure or profit; and we know and enjoy, in consequence, very much more than has been possible to our good grandfathers. The railroad and traveler's Guide Book has become as great a necessity as the Bill of Fare, or the Market itself. Bancroft & Co., the enterprising publishers, (who keep a sentinel on the watch for every new demand from our roving and prospecting constituents,) have just published a new guide under the above title, of the size and appearance of Appleton's Railroad Guide,—of Bradshaw, and all the French and German railroad publications,—pp. 137, containing time tables, maps, etc., which strike every old Californian especially who aims to inform himself constantly of the resources and growth of surrounding or distant sections, as exceedingly well worth having. So easy is it to travel, and to see for one's self in 1869, that nothing but a complete guide has been wanting, for a person casually thinking of any heretofore inaccessible point, to wish himself there and to be there without further ado. The price is 50 cents.

Practical Specifications of Works, executed in Architecture, Civil and Mechanical Engineering, Road-making and Sewerage; to which are added a series of useful agreements and reports. By John Blenkarn, C. E. and architect. Philadelphia: H. C. Baird. 1868. 8 vo. pp. 416.

Projectors of promising and important enterprises are not always wide-awake as to the financial details essential to the beginnings of carrying out. Here lies the wide gap between all the fine plans that are conceived, and their execution. There exists, accordingly, a class of more practical and less presuming engineers, who are sometimes called contractors and sometimes boss laborers, and whose care and specialty it is to be clear on all questions of cost, and specification in detail. The present work is intended to assist engineers and architects with examples and methods chiefly of specifications accompanied by plans, in the acquisition of such all-important practical points in the business of an engineer in full reputation and activity, as could otherwise be acquired only by many years' of experience.

Coal.—At the Bellingham Bay coal mines machinery has been set at work to pump the water out, which will take to the 1st of July. The machinery throws out about four tons of water per minute.

A new discovery of coal has been made in Snohomish County (W. T.), which prospects well.

The "Avitor."

Very warm and hopeful things are said in favor of F. Marriott's aerial machine, by those who went out to witness the several tests made last Sunday—which make us regret that we did not avail ourselves of the opportunity to be amongst the number.

Among other notices given by the reporters of the San Francisco daily press, we quote the following from the *Times* of Monday:

The day was beautiful, but unfortunately the strong wind which prevailed prevented as thorough a trial as was desired. But the inventor, Mr. Frederick Marriott, of this city, who has been at work for eighteen years on the subject of aerial navigation, has now the proud satisfaction of standing where Fulton did when he made his first steamboat. He has secured, beyond doubt, a firm foundation around which inventors of all civilized nations will cast their offerings of improvements until the air will be traversed by men as safely as it now is by the birds. The problem is solved—aerial navigation is no longer a question of doubt.

The Aerial Carriage.

The carriage, which is merely a large working model, is a balloon, shaped liked a cigar, both ends coming to a point. It is 37 feet long, 11 feet from top to bottom, and 8 feet in width. These are the measurements at the center of the balloon, from which point it gradually tapers off toward either end. Around the balloon lengthwise, and a little below the center, is a light frame work of wood and cane, strongly wired together and braced. Attached to this frame, and standing up as they approach the front of the carriage, are two wings, one on either side. They are each five feet wide at a little back of the center of the carriage, and do not commence to narrow down until they approach the front, where they come to a point. These wings are made of white cloth fastened to a light frame work, which is braced securely by wires. The main frame is secured in place by means of strong ribbons which go over the balloon and are attached to corresponding portions of the frame on the other side. To the frame at the hind part of the carriage is attached a rudder or steering gear, which is exactly the shape of the paper used in pin darts, four plans at right angles. This, when raised or lowered, elevates or depresses the head of the carriage when in motion; and when turned from side to side guides the carriage as a rudder does a boat. At the center and the bottom of the balloon is an indentation, or space left in the material of which it is built, in which the engine and machinery are placed on frame work. The engine and boiler are very diminutive specimens, but they do their work handsomely. The boiler and furnace are together only a little over a foot long, four inches wide and five or six inches in hight. Steam is generated by spirit lamps. The cylinder is two inches in diameter and has a three-inch stroke. The crank connects by means of cog-wheels, with tumbling-rods which lead out to the propellers, one on either side of the carriage. The propellers are each two bladed, four feet in diameter, and are placed in the frame work of the wings. The boiler is made to carry eight pounds of steam. When not inflated, the carriage weighs eighty-four pounds. The balloon has a capacity for 1,360 feet of gas. When inflated and ready for a flight it is calculated to have the carriage weigh from four to ten pounds.

Public Trial Yesterday.

The 8:30 A. M. train to San José, yesterday, carried to Shell Mound about 100 invited guests to witness the public trial of Marriott's Aerial Carriage. On arriving at the scene the Avitor works were found with door open and the carriage just coming out into the open air. The wind was blowing quite hard, and coming in gusts it was found that it would be impossible to have a satisfactory trial out of doors. By holding on to the guys and frame work in this wind caused the carriage to be severely strained, and finally it was taken back into the works. The room where it was built is quite large, resembling in construction the Mechanics' Pavilion in this city. Steam was raised and the carriage, obeying its propellers, raised several feet from the floor and started forward at rapid pace. Persons having the guys in hand stopped it at the end of the hall, and turning it around it sailed back. The party congregated cheered heartily. But the trips were not satisfactory to those having it in charge, and on looking the balloon over they found that it was leaking quite badly. It was taken to the pipe leading to the gasometer and the process of filling it up and stopping the leak was commenced. When ready and moved out for a start a large rent occurred at one of the seams near one of the propellers. This was sewed up and made tight, but on refilling the balloon, it gave way several times. Finally, about half past one P. M., damages were repaired and the carriage moved off for another trial. This time it was a complete success. While yet the machine remained, as it were, perfectly dormant, resting upon the floor with less than sufficient buoyancy to raise itself—requiring additional aid to relieve it from connection with earth—the machinery was put in motion and the propellers commenced their revolutions. *At once life was imparted to the whole body*, and it arose promptly and gracefully and took its flight into the air under guidance of the rudder, thus establishing the astounding fact that it had power and could fly; and giving proof that the grand problem had been solved. The carriage mounted nearly to the roof with a firmness and steadiness equal to the movements of an ocean steamer upon smooth water. The guests cheered long and loud, and many fairly danced with delight at the success. The trip back and forth was performed several times with the same success. Finally the carriage was taken out into the open air and held while several photographs were taken.

"As to the shape of the model (writes a correspondent of the *Herald*), just imagine a large and very thick cigar, thirty feet long and fifteen in diameter. From the bottom, and midway, there is a large open cut, in the shape of a V, running up to the center. The boiler is placed in the lower part of this cut, and the engine a little above. A light wooden rib encircles the balloon lengthwise, and divides it into two equal parts. From the head there are two wings of light cloth, in the shape of a jib, attached to the rib and held extending horizontally by a frame. These wings extend beyond the cut, and their breadth is then increased to about five feet. A propeller in the center on each side, about four feet in hight, within and at right angles, with the wings, is worked by the engine. The rudder is five feet long. It is formed, as we might say, of four cloth rudders attached together at right angles, longitudinally."

The editor of the *Transcript* says: "The model possessed a gas capacity of 1,360 feet, and a total weight of 80 pounds. The gas supply was insufficient to raise the Avitor from the ground; but as soon as the little engine started the propeller, the machine lifted itself from the ground, and gracefully commenced its flight through the air. It was kept from going out of sight by two cords attached to it in the hands of persons on the ground. Its motion was regular, and without any of the swaying which might naturally have been anticipated, and its speed, with 90 revolutions of the propellers to the minute, was between four and five miles an hour. The rudder acted well, guiding the air-ship perfectly."

A company has been formed, comprising the names of a number of well known and substantial citizens, for the purpose of constructing a full-sized aerial ship.

Steps have already been taken to protect the inventor's rights, through the agency of this office. We expect to say more of the Avitor soon, and publish an engraving of its appearance on an aerial voyage.

A Silver Plated Locomotive.—The locomotive "America," built at Patterson, N. J., in 1867, and sent to the Paris Exposition, has been brought back to New York, and purchased by the Rock Island Railroad Company. An exchange says it "will open the route to Omaha. An effort will be made to take it through to San Francisco. This locomotive is the finest specimen of workmanship of this kind ever manufactured in the country, and cost $60,000. The boiler is silver plated, the smoke stack of German silver, and the engine house inlaid with hard wood. The tender is beautifully veneered, the word "America" being set in different varieties of wood letters. All the bright work is splendidly polished, the bell, whistle and dome being heavily silver-plated."

Scientific men say that the time of the diurnal revolution of the earth is gradually being shortened on account of shrinkage of the earth by cooling in the interior.

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The Humboldt Mines, Nevada.

Our business agent writes as follows of some of the mines in Humboldt County, Nevada:

Unionville is about twenty miles from Reese River, in Humboldt County. It is a fine, thriving and prosperous town, with three quartz mills running night and day. The first one as I approached was that belonging to the Silver M. Co. This mill now has five stamps in operation, but will soon add five more. The superintendent, Mr. Stewart, informs me that the rock is paying very well—from $35 to $160 to the ton; while there is some that pays much better by shipping to Europe for reduction. Of this they are sending off large quantities every few days. It is black and full of sulphurets, yielding all the way from paying rates to $1,000 per ton.

Fall's Mill.

The next mill reached was Fall's, which is running ten stamps and doing well. This company has a new engine on the ground, which will be running in a few days. Times are lively here, and there is water enough to make power for running fifty mills with large stamps; but fuel is very scarce. Mr. Fall has been using sage brush, and has teams constantly employed in hauling it to the mill.

Placer Diggings

have been struck six miles from this camp, where two companies are working, with results of from $4 to $6 per day to the hand. They have plenty of water.

The Arizona Mine

is about two and a half miles from Unionville, up the cañon, and on the side of a very precipitous mountain. The company has a very fine ledge, from four to ten feet thick. Through the kindness of the superintendents, Messrs. Ross and Brackett, I was shown through the mine, which is owned by the company that has the mills at Unionville. There is a tunnel 400 feet long, with drifts running south and two chutes running up to the top of the hill. I could see an abundance of native silver and chloride all through the white quartz.

Mr. Stewart has some thirty men employed, and Messrs. Fall & Co. have thirty-four in the mine, working day and night. The ore is very rich. One of these companies own the original mine, and the other is an extension of the same, south. The two companies use the same tunnel for bringing out their ore, which is hauled to the mill by oxen. There are, no doubt, many other valuable mines in this neighborhood, which will eventually be brought to light by some industrious prospectors.

A Sulphur Mine.

Mr. Spence is opening a sulphur mine near the Humboldt House, and about 800 feet from the C. P. Railroad. He is now down about 28 feet, and it is expected that the company with which he is connected will fit up refining works at an early day. The deposit is a very promising one.

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Declared by connoisseurs to be the only
GOOD SAUCE.
The success of this most delicious and unrivalled condiment having caused certain dealers to apply the name of "Worcestershire Sauce to their own inferior compounds, the public is hereby informed that the only way to secure the genuine, is to ask for
Lea & Perrins' Sauce,
and see that their names are upon the wrapper, labels, stopper, and bottle.
Some of the foreign markets having been supplied with a spurious Worcestershire Sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L and P give notice that they have furnished their correspondents with power of attorney to take instant proceedings against Manufacturers and Vendors of such, or any other imitations by which their right may be infringed.
Caution against Fraud.
Ask for LEA & PERRINS' Sauce, and see name on the Wrapper, Label, Bottle, and Stopper.
Wholesale and for Export by the Proprietors, Worcester; Crosse & Blackwell, London, etc., etc.; and by Grocers and Oilmen universally. Agents, CROSS & CO., San Francisco. 8v18-6m

FAIRBANK'S PATENT
U. S. STANDARD

COUNTER AND
PLATFORM SCALES!
Also, large Scales for weighing loaded wagons of Ore, Hay, etc., from 6,000 to 40,000 pounds capacity. Manufacturer's Branch House.
FAIRBANKS & HUTCHINSON,
120 California street, San Francisco.
Agents for Baldwin's Improved Money Drawers.
Send for a Catalogue. 18v1-eow6m

THE SUPERIOR IS THE CHEAPEST AND BEST AND THE ONLY AXLE GREASE
That will resist the extremes of heat and cold without liquefying or hardening.
It is therefore peculiarly adapted to the varied cli... this coast, especially localities where T... REQUIRES EXCESSIVELY HOT... kinds of grease to run from the position. It remains ... deposit of GUM. T... properties, du... approved ... RO...

Ayer's
Hair Vigor,
For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a
HAIR DRESSING,
nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.
Prepared by Dr. J. C. Ayer & Co.,
PRACTICAL AND ANALYTICAL CHEMISTS,
LOWELL, MASS.
PRICE $1.00.
Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18eow4m

Wonderful Invention!—To Housekeepers!
NEW METHOD OF
WASHING CLOTHES
WITHOUT LABOR.
JOHN REIST'S Celebrated Patent Automatic
CLOTHES WASHER AND BOILER.

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are Infringements," have proved total failures. See decision U. S Patent Office, November 4, 1868.
See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco,
Dealer in Stoves and Tinware,
25v1 3m 67 and 69 Fourth st., bet. Mission and Jessie sts.

The Perfection of Prepared Co...
MARAVILL...
Sole Proprieto...
The Cocoa of Lin... which ... E...

TRADE MARK.

New Almaden Vichy Water,
(CALIFORNIA VICHY WATER.)
FROM THE SPRINGS,
NEW ALMADEN,
Santa Clara County.
F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.
OFFICE, 506 JACKSON STREET,
GENERAL DEPOT:
Corner of Jackson and Montgomery streets.
This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.
It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.
California Vichy Water is used with success in many cases, such as—
Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the Indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.
(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.
PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.
Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's
Claims and Mill,
Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel run through them at right angles, make drainage of from seventy to eighty feet mine. The mine is well ventilated face, and well timbered so far steam Hoisting Works, capa... 300 feet. A force of thirty both mill and mine ... On the surface these veins. miners. ... per ...

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

FOR THE WEEK ENDING JUNE 22D.

MEAT-CUTTING MACHINE.—Jas. G. Divoll, Sonora, Cal.—91,526.

This invention relates to an improved apparatus for cutting or chopping meats, in order to reduce them to sufficiently small pieces to be fed into a machine for grinding it into sausage meat. It can also be used for cutting any vegetable substance which it is desired to reduce in size. It consists of two eccentric knives, operated by proper mechanism inside of a closed case or box, in which the meats or vegetables to be cut are first placed. The box is arranged to move back and forth, so that the knives will cut from side to side, thus bringing every portion of the substance to be cut under their action.

WATER-CLOSET VALVE.—W. Smith, San Francisco, Cal.—91,574.

LETTER-BOX.—Fred. Wittram, San Francisco, Cal.—91,583.

ORE-WASHER AND CONCENTRATOR.—Wm. G. Heslep and Thomas A. Cochrane, Jamestown, Cal.—91,627.

This invention is illustrated and fully described on the first page of the present issue.

MINING SLUICE FOR SAVING SULPHURETS. Orlando Jennings, North San Juan, Cal. 91,638.

This invention was fully illustrated and described in our issue of April 24th.

GANG-PLOW.—J. W. Lewis, Oregon City, Oregon,—91,643.

ROLLER-CUTTER FOR PLOWS.—J. W. Lewis, Oregon City, Oregon.—91,644.

COMPOUND FOR SALVE.—Nicholas Lumsden and Frank Lessman, Oakland, Cal.—91,647.

ELLIPSOGRAPH.—Andrew Smith, Dayton, Oregon.—91,681.

POCKET KNIFE.—Addison G. Waterhouse, San Francisco, Cal.—91,693.

STEP-LADDER.—Charles Edward Boman, San Francisco, Cal.—91,706.

DEVICE FOR TREATING HIDES.—Herman Royer, San Francisco, Cal.—91,772.

The above invention consists of a rare device for converting hides, in their raw and rough state, into leather, suitable for belts, lacings and other purposes, and is an improvement on a machine for which a patent was issued to the present patentee and his brother Louis, May 12, 1868. The invention consists in a device by which the hides, when properly secured in it, may be twisted each way, back and forth, until it becomes soft and pliable, without injury to the texture; thus rendering the hide so treated capable of being used for many purposes for which tanned leather is ordinarily employed. By the use of this device the operation of preparing a raw hide in the manner indicated is readily, easily and quite perfectly accomplished.

SEAT FOR VEHICLE.—Samuel S. Simmons, Watsonville, Cal.—91,779.

Every person is a benefactor to his race who eases the jolts and jars to which we are liable to be subjected. It is usually considered one of the "pleasures" of life to be rolled "gently along" a rough road in some wheeled vehicle, and thus be moved from place to place without violent exercise. This is true when we ride in a carriage borne upon yielding springs. But when we attempt to make the passage in one of our lumbering farm wagons, the exercise is often a little more than the rider bargained for. This invention is intended to ameliorate affairs by providing an easy seat for the driver, as well as for others in the wagon, and is especially applicable to sulkies and gigs. The seat is mounted on an oscillating frame, and is held in an upright position by springs placed on each side, at its lower end, which allows the seat to move from side to side, and permits the driver to maintain it in a vertical position at all times. Springs are also arranged so as to allow the seat to have a forward and backward motion, thus rendering it much easier for the driver than where the seat is fixed. It also consists in providing movable or adjustable stirrups for the feet of the driver, with which he can more readily accommodate himself to the movements of the vehicle.

FOR THE WEEK ENDING JUNE 29th.

MACHINE FOR KYANIZING WOOD.—David W. Hunt, San Francisco, Cal.—91,848, antedated June 22d, 1869.

FLUX FOR SMELTING ORES OF GOLD, SILVER, AND OTHER METALS.—Chas. W. Moore, San Francisco, Cal.—91,862.

AMALGAMATOR.—Geo. Stevens, San Francisco, Cal.—91,878.

DUST-DEFLECTOR FOR RAILROAD CARS.—J. P. O. Lownsdale, Portland, Oregon.—91,947.

PROCESS OF ROASTING AURIFEROUS SULPHURETS.—Wm. Bruckner, Central, Colorado Territory.—92,009.

SUBMARINE FOUNDATION.—Wm. H. Foye, San Francisco, Cal.—92,033.

STEAM ENGINE GOVERNOR.—William H. Howland, San Francisco, Cal.—92,051.

STEAM ENGINE VALVE.—William H. Howland, San Francisco, Cal.—92,052.

GANG PLOW.—William B. Rice, Oakland, Oregon.—92,099.

The above list of patents will be noticed next week.

Foreign Patents for Pacific Coast Inventors.

Frederick Gutzkow, of San Francisco, Cal., has made application for a British patent on his "Process for preparing sulphurets and obtaining pure silver therefrom," through the London agents of the MINING AND SCIENTIFIC PRESS PATENT AGENCY. Number of application, 1868 of 1869.

British Patent No. 762 of 1869 was sealed June 15th, granting to William Babcock, of San Francisco, Cal., a patent for "a new or improved preservative paint or composition for protecting ships' bottoms, preserving submarine wood-work, and other useful purposes." This is the paint compositiou for which a United States patent was recently issued to Henry Roundy, of this city, through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. The paint is now being manufactured in this city by the California Marine Metallic Paint Co.

JOHN WRIGHT & CO.,

—DEALERS IN—

PICKS AND PICK HANDLES.

Sole Agents for Washoe Tool Company,

Nos. 13 and 15 Fremont sts., at Nelson & Doble's, San Francisco.

LIST OF PRICES OF PICKS:

No.	1	Round Eye surface, 4	lbs	$16	No. 17	Drifting	4½ lbs $20
"	2	" " 4½	"	16	" 18	"	5 " 20
"	3	" " 5	"	18	" 19	"	6½ " 22
"	4	" " 5½	"	18	" 20	"	6 " 22
"	5	" " 6	"	20	" 21	Poll	4 " 20
"	6	" " 6½	"	22	" 22	"	4½ " 20
"	7	" " 7	"	24	" 23	"	5 " 20
"	8	Flat Eye surface 4	"	16	" 24	"	6½ " 20
"	9	" " 4½	"	16	" 25	"	6 " 22
"	10	" " 5	"	18	" 26	"	6½ " 24
"	11	" " 5½	"	18	" 27	"	7 " 30
"	12	" " 6	"	20	" 28	Coal	2 " 15
"	13	" " 6½	"	22	" 29	"	2½ " 15
"	14	" " 7	"	24	" 30	"	3 " 16
"	15	Drifting 3½	"	18	" 31	"	3½ " 16
"	16	" 4	"	18			

Also PICK EYES ready for the steel, for the Blacksmiths, which will be sold cheap.

I wish to call special attention to my

NEW ADZE EYE PICK,

Which was made under my own supervision while in New York. For BEAUTY, STRENGTH and DURABILITY, they are unequaled.

JOHN WRIGHT.

We have a large stock of EXTRA NO. 1

WHITE HICKORY DRIFTING PICK HANDLES,

WHICH WE OFFER CHEAP.

CALL AND EXAMINE FOR YOURSELVES.

16v18-1am-3m

ADDRESS WANTED.—We are desirous of communicating with Allen Oliver, lately of Jamestown, Tuolumne County, California. tf

RETURNED.—Dr J. H. Paine, Dentist, Wadsworth House, No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m R. F. HOWLAND.

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Carling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to newcomers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco. 21v18 3m

Cholera—How to Cure It.—At the commencement of the diarrhœa, which always precedes an attack of the cholera, take a teaspoonful of the Pain Killer in sugar and water (hot if convenient), and then bathe freely the stomach and bowels with the Pain Killer clear. Should the diarrhœa or cramps continue, repeat the dose every fifteen or twenty minutes till the patient is relieved. In extreme cases two or more teaspoonfuls may be given at a dose. The Pain Killer, as an internal remedy, has no equal. In cases of Summer Complaint, Dyspepsia, Dysentery, Asthma, it cures in one night by taking it internally, and bathing with it freely. Its action is like magic when externally applied to Bad Sores, Burns, Scalds, and Sprains. For Toothache, don't fail to try it. In short it is a *Pain Killer.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents. jy1m

SUISUN CITY, Cal., June 26, 1869.

MESSRS. DEWEY & CO:—This is the third time you have presented me with Letters Patent within twelve months. Gentlemen, you have done all I have asked of you—you have been honest; you are men that an inventor can rely upon for doing business for him, and be need not fear of being swindled or wronged in any way. I would give you business to do in your various departments in preference to any one else. Many thanks to you for your success. You have obtained valuable patents for me, and I appreciate your kindness, your honesty, ability and success. Yours, RICHARD KNOTT.

To News Agents.

From July 1st, 1869, News Agents desiring five or more copies weekly of the MINING AND SCIENTIFIC PRESS, will be furnished direct from the office, at a reduced price from former rates. Orders for a less number can best be supplied through San Francisco wholesale agents.

A NEW Gold Metal.

THE GOLD METAL WATCHES

Now being introduced by

C. E. COLLINS & CO.,

No. 629 Washington Street,

SAN FRANCISCO,

Surpass anything yet made in the way of an Imitation Gold Watch. They wear well, and keep good time.

The Ladies' Watches cost $8 and $10 each.
The Gentlemen's cost $15 and $20 each.
Chains, from $3 to $6 each.

RECOMMENDATIONS:

SAN FRANCISCO, May 12, 1869.

This is to certify, that I have carried one of the small size Gold Metal Watches which I got of C. E Collins & Co., and I find that it runs as well, and keeps as good time, as any watch I ever carried, and I can therefore recommend them. I am engaged on the Sacramento steamer "Chrysopolis." C. A. COLBY.

I am engineer on the San Jose Railroad. I have been carrying one of C. E. Collins & Co's watches for about one year, and I can safely say it is the very best watch for time that I have ever seen. GEO. CORNWALL.
Engineer on the San Jose Railroad.

MESSRS. C. E. COLLINS & CO:—Having heard your watches spoken of in the highest manner, I have resolved to order one for myself. You may send me one of the Lady's $10 watches, without the chain. Send it as soon as possible, as I am very much in need of a time-piece.
R. B PATTEN,
Toano, C. P. R. R.

The public are cautioned against buying their watches at high prices, as many of them are sold for genuine *Gold Watches*, at from $100 to $150 each.

For List of Prices and Description of Goods, send directly to us. Can be sent by Express to be paid for on delivery.

C. E. COLLINS & CO.,
No. 629 Washington street, San Francisco.

P. S.—Where six watches of the above are ordered at one time, we will send one extra, free of all charges.

We also deal in the finest Gold and Silver Watches, Watch Materials, etc. Send for circulars or prices.
26v18-4t

Pacific Mail Steamship Co's
STEAMSHIPS FOR
NEW YORK, JAPAN AND CHINA.

LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the 10th, 17th and 30th of each month that has 30 days.
On the 10th, 18th and 30th of each month that has 31 days.
When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding; when the 17th falls on Sunday, they will leave on the Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departure of the 17th or 18th is expected to connect with the French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America. Through tickets can be obtained.

The following Steamships will be dispatched on dates as given below:

July 9—GOLDEN CITY.....Capt. Wm. F. Lapidge,
Connecting with ALASKA, Capt. Gray.
July 17—MONTANA.....Capt. E. S. Farnsworth,
Connecting with HENRY CHAUNCEY, Capt. Connor.
July 30—COLORADO.....Capt. Wm. H. Parker,
Connecting with ARIZONA, Capt. Maury.

Passengers berthed through. Baggage checked through. One hundred pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets to Liverpool by the "Inman" and "National" Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco, where may also be obtained orders for passage from Liverpool or Southampton to San Francisco, either via New York or St. Thomas—if desired an amount of £10 to £20 will be advanced with the above orders. Holders of orders will be required to identify themselves to the Agents in England.

For Merchandise and Freight to New York and Way Ports, Company's Form of Bill Lading only used.

No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.

The Steamship GREAT REPUBLIC, Capt. Cavarly, will be dispatched for YOKOHAMA and HONGKONG on SATURDAY, July 3d, 1869, at noon connecting at YOKOHAMA with the steamer NEW YORK for SHANGHAI. Shippers of freight to China or Japan are requested to mark on each package its destination.

For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

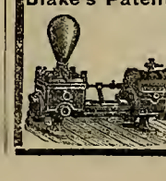
OLIVER ELDRIDGE, Agent.

THE BEST WEEKLY IN AMERICA.

MOORE'S RURAL NEW YORKER,

The largest, best and cheapest RURAL, LITERARY and FAMILY WEEKLY, in the world, enters upon a new Half Volume July 3, and hence *Now is the Time to Subscribe!* Sixteen five-column pages. Employs the best talent. Finely and profusely illustrated. For example, see the splendid full page group of GEN. GRANT'S FAMOUS HORSES, in No. for July 3d. Adapted to the whole country. Combines Ability, Variety, Taste, Spirit, Progress and Usefulness. Circulates all over the Continent, and now reaches the Pacific States in a week from date. Is not only a superior literary and Family Paper but treats fully and ably upon Rural and Domestic affairs, Science, Art, etc. Try it, and you will find that "Moore's Rural" is (as both Press and People say), the Best Weekly in America. Only $3 a year—$1.50 for half. Ask your P. M., or address D. D. T. MOORE,
1v19 2t 41 Park Row, New York.

Blake's Patent. THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's



Patent Steam PUMP

It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted positive under all circumstances. Send for a circular. W. O. M. BERRY & CO., 114 California St., San Francisco, Cal.

Company Transactions.

New Incorporations.

The following new companies have been incorporated:

EUGENE CITY (OREGON) WATER CO.—Articles filed at Salem. Object: to bring water into Eugene City for manufacturing, irrigation, etc., from the head of McVey Slough, near the junction of Coast and Middle Forks of Willamette rivers. Capital stock, $25,000, in shares of $250. Trustees: A. W. Patterson, N. L. Packard, A. S. Patterson, Wm. Smith and J. Kersey.

HARRISON S. M. Co.—Sacramento, June 24th. Capital stock, $1,000,000, in shares of $100 each. Trustees: G. A. Courson, Chas. E. Heister and M. H. Kollock. Principal place of busiuess, San Francisco.

TEXAS M. Co. Sacramento. June 24th. Capital stock, $1,000,000, in shares of $100 each. Trustees and place of business, same as above.

Meetings, Elections, Etc.

FRONT STREET, M. & O. R. R. Co.—July 1st. Presidcnt, N. D. Aruot; Vice President, Wm. Blackwood; Treasuror, Abner Doble; Secretury, Andrew White; Superintendent, Henry Casebolt.

SULLIVAN M. Co.—Jnly 1st. Trustees: W. J. Williams (President), H. G. Parker, George Parker, Ira P. Rankin and L. J. Lewis. O. D. Squire was appointed Secretary.

ALHAMBRA M. Co.—Jnly 8th. Trustees: W. Ayer (President), E. P. Swett (Treasurer), Ira G. Hoitt (Secretary), A. J. Downer and George Osgood.

POCAHONTAS M. Co.—July 8th. Trustees: L. A. Booth (Prcsident), John Barton (Vice President), D. A. Jennings (Secretary), A. G. Stiles and Joseph Sedgeley. N. D. Burlinghsm, Superintendent.

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, July 9, 1869.

Flour, Extra, ₱ bbl	$4 75	@	$5 50
Do. Superfine	4 25	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 40	@	1 70
Oats, ₱ 100 lbs	1 50	@	1 65
Barley, ₱ 100 lbs	95	@	1 25
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	50	@	1 15
Hay, ₱ ton	10 00	@	17 00
Live Oak Wood, ₱ cord	9 00	@	10 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10
GROCERIES, ETC.			
Sugar, crushed, ₱ lb	14½	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	19	@	20
Do. Rio	—	@	19
Tea, Japan, ₱ lb	75	@	90
Do Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	6½	@	6½
Coal Oil, ₱ gallon	45	@	47½
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	35	@	38
Isthmus Butter, ₱ lb	32½	@	—
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	25	@	33½
Lard, ₱ lb	13	@	17
Ham and Bacon, ₱ lb	14	@	16
Shoulders, ₱ lb	7	@	8
Retail Prices.			
Butter, California, fresh, ₱ lb	45	@	50
do. pickled, ₱ lb	30	@	—
do. Oregon, ₱ lb	25	@	25
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	50	@	55
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1½	@	2
Potatoes, Sweet, ₱ lb	—	@	—
Tomatoes, ₱ lb	5	@	10
Onions, ₱ lb	5	@	8
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	5
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	18
Oranges, ₱ dozen	50	@	120
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. C.	7	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, July 9, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1¼@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1½c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2¼c ₱ lb.			
Scotch and English Pig Iron ₱ ton	$42 00	@	$—
White Pig ₱ ton	36 00	@	—
Refined Bar, bad assortment ₱ lb	— 03	@	—
Refined Bar, good assortment, ₱ lb	— 04	@	—
Boiler, No. 1 to 4	— 04¾	@	—
Plate, No. 5 to 9	—	@	04¾
Sheet, No. 10 to 13	— 04½	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5½
Sheet, No. 24 to 27	— 05	@	— 6½
COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb			
Sheathing, ₱ lb	— 20	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22
TIN PLATES.—Duty: 25 ₱ cent. ad valorem.			
Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— —	@	— 35
STEEL.—English Cast Steel, ₱ lb	— —	@	— 15
QUICKSILVER.—₱ lb	— 55	@	— 60
LEAD.—Pig, ₱ lb	— 7½	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
ZINC.—Sheets, ₱ lb	— 10½	@	— 11
BORAX.—California, ₱ lb	— 38	@	— 40

ELECTROTYPE ENGRAVINGS, CUTS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State

THE CROPS.—The Tuolumne *News* gives some interesting facts concerning the crops in that county, from which it appears that an immense amount of grain will be harvested this year on the west side of the San Joaquin river. In a region where not over 10,000 bushels of grain were ever raised before, there will be harvested this fall from 900,000 to 1,000,000 bushels. The *News* remarks that, enormons as this yield will be, there can scarcely be a doubt but that the lowest statement will certainly be realized. As nearly all of this is from land for the first time put into wheat, it will undoubtedly more than compensate for any falling off of crops in other parts of the State from the effects of rust, etc.

"HOW IS YOUR LIVER?"—This is the exclamation put by Lord Byron into the mouth of Beppo's wife on meeting her billious-looking lord after his return from captivity in a tropical clime. If the samo question was propounded to every American to-day, three out of every five thus interrogated would probably admit that the important organ was "out of order." Why should this be, when it is notorious that a course of DRAKE'S PLANTATION BITTERS will impart perfect regularity to its action, and give it a healthy tone, as certainly as the moon regulates the ebb and flow of the sea? Whenever the whites of the eyes betray a tinge of yellow, or there is pain in the right side or between the shoulders, or a general feeling of lassitude, languor and depression is experienced, be *sure* that the liver is affected, and commence taking this uncqualled anti-bilious and tonic preparation. The billious invalid who follows this advice will soon be able to meet the question, "How is your liver?" with the cheerful rospouso, "perfectly sound." *,*

THREE HUNDRED large mahogany logs from Central America, at much lower rates than Eastern mahogany, at Hobbs, Gilmore & Co's Box Factory, Market street, near Bealo. *,*

IF the type of your evening paper begins to look small, dim or indistinct, apply at once to C. Muller, 205 Montgomery street, for a pair of his A No. 1 Spectacles. *

Important to Assayers.

Crucibles.

The Patent Plumbago Crucible Co.,
Manufacturers of all kinds of
Melting Pots, Portable Furnaces,
CRUCIBLES, and other fire-standing Goods,
Battersea Works, London.

THE MORGAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; change of temperature has no effect on them; stand on the average forty to fifty pourings.

CERTIFICATES;

United States Branch Mint, San Francisco, Cal., March 12, 1869.—Messrs A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. Branch Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. A. ECKFELDT,
Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 25 pourings of brass.
GALLAGHER, WEED & CO.,
California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs. A. S Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when first used. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,
A. S. HALLIDIE & CO.,
18v18-9p **519** Front street, San Francisco

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v191f

New Mining Advertisements.

George Washington Silver Mining Company.
White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of ten cents per share (or $1 per foot), was levied upon the capital stock of said Company, payaable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the tw 10th day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-sixth day of August, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.
Office, Stevenson Building, San Francisco. jy10

North Star Gold Mining Company.—Location of Works: Grass Valley, Nevada County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the fourth day of June, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm H V Cronise, Trustee	4	1	$ 24 00
C F Fargo	5	87	1740 00
Thomas Hope	6	87	1740 00
Jas H Crossman	8	1	20 00
Jas P Partridge	10	37	740 00
W K Dean	11	1	20 00
A E Hill, Trustee	16	20	400 00
E N Torrey	25	5	100 00
Geo W Beaver	28	29	580 00
A E Hill, Trustee	29	15	300 00
P G Partridge	31	1	24 00
Samuel P Holden	35	5	100 00
Samuel P Holden	36	5	100 00
Violetta Clement	39	10	200 00
Benjamin Brady	42	10	200 00
Benjamin C Wright	44	5	100 00
Thos J Poulterer	45	50	1000 00
A E Hill, Trustee	47	15	300 00
A E Hill, Trustee	52	10	200 00
A E Hill, Trustee	57	10	200 00
A E Hill, Trustee	58	10	200 00
A E Hill, Trustee	59	10	200 00
A E Hill, Trustee	64	65	1300 00
A E Hill, Trustee	65	75	1500 00
A E Hill, Trustee	69	10	200 00
W L Torrey	74	5	100 00
A E Hill, Trustee	73	5	100 00
A E Hill, Trustee	76	2	40 00
A E Hill, Trustee	82	90	1800 00
A E Hill, Trustee	85	5	100 00
A E Hill, Trustee	86	5	100 00
L Kuhn, Trustee	88	5	100 00
L Kuhn, Trustee	89	5	100 00
A E Hill, Trustee	99	25	500 00
A E Hill, Trustee	100	25	500 00
A E Hill, Trustee	101	25	500 00
Thos J Poulterer	102	10	200 00
A E Hill, Trustee	103	15	300 00
A E Hill, Trustee	104	5	100 00
A E Hill, Trustee	105	5	100 00
E T Pease	106	10	200 00
E T Pease	107	10	200 00
E T Pease	108	10	200 00
E T Pease	109	10	200 00
E T Pease	110	10	200 00
E T Pease	111	10	200 00
E T Pease	114	15	300 00
R T Thomas	117	50	1000 00
M Bettman	118	5	100 00
A E Hill, Trustee	120	32	640 00
A E Hill, Trustee	123	5	100 00
A E Hill, Trustee	125	10	200 00
Wm B Allen	127	5	100 00
McDonald & Whitney, Trus	129	3	60 00
E T Pease	130	15	300 00
Charles Stevens	131	10	200 00
Charles Stevens	132	5	100 00
Charles Stevens	133	10	200 00
John W Titcomb	134	10	200 00
Thos J Poulterer	150	50	1000 00
John W Titcomb	138	10	200 00
A E Hill, Trustee	139	10	200 00
Geo W Beaver	143	50	1000 00
C F Fargo	144	10	200 00
A H Lissak, Jr., Trustee	146	5	100 00
George A Raymond	147	5	100 00
A H Lissak, Jr., Trustee	148	5	100 00
A K P Harmon, Trustee	149	1	20 00
W B Bourn, Trustee	150	750	15000 00
A E Hill, Trustee	153	74	1480 00
A E Hill, Trustee	155	21	400 00
A E Hill, Trustee	157	5	120 00
A E Hill, Trustee	158	500	10000 00
A E Hill, Trustee	159	30	600 00
A E Hill, Trustee	160	100	2000 00
A E Hill, Trustee	161	10	200 00
A E Hill, Trustee	162	130	2600 00
A E Hill, Trustee	164	56	1120 00
A E Hill, Trustee	165	23	460 00
A E Hill, Trustee	166	16	320 00
A E Hill, Trustee	167	3	60 00
F A Massey	168	5	100 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of June, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 10 at No 402 Montgomery street, San Francisco, on Friday, the thirtieth day of July, 1869, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. W. COLBURN, Secretary.
Office, room No. 10 second floor of No. 402 Montgomery street, San Francisco. jy10

Thunderbolt Mill and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of five cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twelfth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-sixth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.
Office, Stevenson Building, San Francisco, Cal. jy10

Yosemite Mining Company, Humboldt County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of July, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco.

Any stock upon which said assessment shall remain unpaid on the seventh day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-fourth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary *pro tem.*
Office, No. 220 Clay street, San Francisco. jy10

Mining Notices—Continued.

Daniel Webster Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 413 California street, San Francisco, Cal. jy3

Engraved to Order.—Persons who desire to illustrate their individual establishments or business, should give us their orders for Engraving and Printing, and we will guarantee good work and reasonable prices.

DEWEY & CO.,
Patent Agents, Publishers and Job Printers, 414 Clay st.

Evening Star, No. 1, Silver Mining Company.
Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of June, 1869, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Saturday, the thirty-first day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-first day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.
Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. je26

Gold Hill Tunneling Gold and Silver Mining Company.—Location: Gold Hill, Storey County, State of Nevada.

The Fifth Annual Meeting of the Stockholders of the above named Company, for the election of Trustees to serve for the ensuing year, will be held on SATURDAY, the seventeenth day of July, 1869, at 3½ o'clock P. M., at their office, 414 California street, San Francisco, Cal.

R. WEOENEB, Secretary.
Office, 414 California street, San Francisco. je19

I. X. L. Gold and Silver Mining Company.—Location of Mine: Silver Mountain District, Alpine County, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the tenth day of May, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. shares.	Amount.
Evans, Gomer	335	90	$135 00
Bridges, Mary C.	360	12½	18 15
Fenner, Riley	55	10	15 00
Clark, T B	375	10	15 00
Clark, T B	386	2 ½	33 75
Long, E M	354	10	15 00
Phillips, Chas	60	4¾	6 55
Vega, F de la	151	11	16 50
Jardin, Henry	188	5	7 50
Jardin, Henry	304	3	4 50
Jardin, Henry	330	12½	18 75
Jardin, Henry	331	5	7 50
Jardin, Henry	334	15	22 50
Hepburn, James	116	5	7 50
Hepburn, James	154	5	7 50
Hepburn, James	217	10	15 00
Blanding, Louis	237	28	42 00
Cairns, John	249	70	105 00
Bolts, John	286	8	12 00
Bolts, John	281	10	15 00
Hatch, F S	312	8	12 00
Love, R K	275	5	7 50
Love, R K	332	5	7 50
Cutter, R S	366	3½	5 25
Cutter, R S	384	10	15 00
Lung, M	385	22 7-16	33 60
Healy, E D	389	10	15 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth (10th) day of May, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Olney & Co., auctioneers, No. 426 Montgomery street, San Francisco, on Wednesday, the fourteenth day of July, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. CROWNINSHIELD, Secretary.
Office, Pioneer Hall, Montgomery street, up stairs, San Francisco. jy6

Notice.—The Annual Meeting of Stockholders of the "Kewanee Silver Mining Company," for the election of Trustees and the transaction of any other important business, will be held at the office of the Company, No. 211 California street, on SATURDAY, July 10th, 1869, at 3 o'clock P. M.

EDWARD BARRY, Secretary.
June 10th, 1869. je12

San Fernando Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of the Stockholders of the San Fernando Tunnel and Silver Mining Company will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 3 o'clock P. M., for the purpose of electing Trustees to servo for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner Montgomery and California streets.
San Francisco, July 1, 1869. jy3

Sedgley Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

The first Annual Meeting of the Stockholders of the Sedgley Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 1 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner of Montgomery and California streets.
San Francisco, July 1, 1869. jy3

White Cloud Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of Stockholders of the White Cloud Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 2 o'clock P. M. for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner of Montgomery and California streets.
San Francisco, July 1, 1869. jy3

Willimantic Silver Mining Company. Location of works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of May, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the nineteenth day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the tenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco. je26

PATENT OFFICE REPORTS, from 1843 to 1847, MECHANICAL, are wanted for duplicate copies at this office. Parties having them for sale will please state price, and address DEWEY & CO., Mining and Scientific Press office San Francisco.

Metals—What are They?

[Written for the Mining and Scientific Press.]

BY E. PIQUE.

EDITORS PRESS :—In your issue of March 27th, you extract the following remarks from the *Mechanics' Magazine:*

"We have no general definition of a metal, to show us what constitutes any substance, metallic or non-metallic. This is very odd, as metals are considered to form such a distinct class from other substances. Still the most learned in chemistry are not agreed as to what substances are metals, etc. There apparently is no property yet discovered that is common to the whole list of fifty-two metals. The word metal, apparently, is just a name without any distinctive properties attached to it."

There seems to be truth in the above remarks. Some of the older chemical works give the following distinguishing properties:

Metals are elementary bodies, that

1. Possess a certain luster *(metallic luster)*. There are a good many other bodies that show the same; but they are mostly compounds, and not elements. The metals do not show that luster if precipitated in a finely divided state from a very diluted solution, but they receive it again by friction with a hard body.

2. They are not transparent *(opaque)*, and are *not soluble* in water. Both of these properties are shared by some not metallic substances; therefore, they do not afford any distioguishing mark.

3. Metals in a solid state are good *conductors* of *electricity* and of *heat*, while the non-metallic elements are *insulators* of oleotricity and bad conductors of heat. Only this last property has been retained by the new works of chemistry as a distinction.

It is generally agreed that out of the whole series of elementary substances there are thirteen that are not metals (oxygen, sulphur, selenium, chlorine, bromine, iodine, thorine, hydrogen, nitrogen, phosphorus, silicon, borax, and carbon). All of these (with the exception of *carbon*, which, when properly prepared, is a good conductor of electricity) are, in fact, insulators—or non-conductors of electricity—and this is sufficient to distinguish them from the metals. This holds good only at ordinary temperature, since the gases at a high temperature will conduct olectricity, and so will many of the solid insulating substances, when in a molten state. I would therefore propose the following definition: *Metals are elementary substances, which, at ordinary temperature are good conductors of electricity*, providing their particles are snfficiently condensed.

OUR INDUSTRIAL POSSIBILITIES.—"We shall yet make our own crockery and finer kinds of pottery, which we still mainly import, and shall grow as well as manufacture the silks for which we are still mainly indebted to the insects of China and the looms of France, we having in California a more genial climate for the silk-worm than Europe or Asia can boast; while we are already reeling and spinning, on American machinery invented for the purpose, vast quantities of raw silk imported in an imperfect or damaged condition (answering to the 'swingle-tow' of flax) which all the ingenuity and patient industry of 'the Flowery Land' had given up as hopelessly intractable and worthless. So shall we continue, under a beneficent policy of encouragement and support, to develop new and larger possibilities of industrial achievements, and in expanding and diversifying our own national industry, benignantly stimulate and ultimately renovate that of all mankind."—*Horace Greeley.*

THE CINCINNATI GAS EXPLOSION.—The engineer of the gas company writes in full of this occurrence,—before spoken of in the PRESS,—giving the facts and his explanation. The painter at work upon the crown of the gas-holder, who did not leave with the others at the dinner-hour, lighted his pipe and threw down the match. The gas that leaked from the crown, mixed with the air directly above it, and made an explosive mixture, which was ignited by the match. The pipe was found directly after the occurrence, still containing fire and hot ashes.

Machinists and Foundries.

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,

SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Acquires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

superior for working either GOLD OR SILVER ORES, and s the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

IRA P. RANKIN. A. P. BRAYTON. A. G. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,

SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequalled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing· Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Oougs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

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J. P. O'ALLAGHER. J. H. WEED V. KINGWELL.

9v13-1y

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BENJAMIN ELLIOT,

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Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

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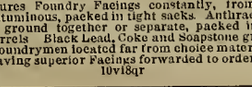

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COPPERSMITH,

226 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.

13v11

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

6v11-6qr No. 28 Fremont street, San Francisco.

Miners' Foundry

—AND—

MACHINE WORKS

Nos. 245 to 255 FIRST STREET,

San Francisco.

HOWLAND, ANGELL & CO.,

PROPRIETORS,

Manufacturers of Machinery for

QUARTZ MILLS. FLOUR MILLS,
SAW MILLS, SUGAR MILLS,
POWDER MILLS, PAPER MILLS

Steam Engines of all Kinds.
Amalgamators of all Kinds.

MINING PUMPS, HOISTING WORKS,
OIL WELL TOOLS, ROCK BREAKERS,

—AND—

Machinery and Castings of all kinds, either of Iron or Brass.

Boilers and Sheet Iron Work in all its Branches.

Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

Russia Iron Screens, of any degree of fineness. We are the only manufacturers on this coast of the

HICKS ENGINE.

The most compact, simple in construction, and durable, of any Engine in use.

W. H. HOWLAND, H. B. ANGELL,

13v14-qr **CYRUS PALMER.**

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral corrugations. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

14v11 SACRAMENTO CITY

THE RISDON

Iron and Locomotive Works.

Incorporated, April 30, 1868. Capital, $1,000,000.

Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.

Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Devoe, Dinsmore & Co., San Francisco.

Steam Engine Builders, Boiler Makers,

MACHINISTS AND FOUNDRYMEN.

All work in their line attended to with promptness and dispatch.

Directors:

S. F. Butterworth, Chas. E. McLane,
Lloyd Tevis, John N. Risdon,
Jas. Pollock, Joseph Moore,
Ben. Holladay,

JOHN N. RISDON, President.

Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis E. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

G. T. PRACY.

MACHINE WORKS,

NOS. 109 and 111 MISSION STREET,

Between Main and Spear.

New and second-hand

Engines and Boilers,

FOR SALE.

Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

MANUFACTURER OF

Lathes, Drills,

And MILL MACHINERY of every description.

PRACY'S

New and Improved

STEAM ENGINE

REGULATORS,

The best and cheapest yet invented—manufactured and for sale. Parties are invited to examine it in practical operation.

F. A. HUNTINGTON'S

Shingle Machines

on hand.

Particular attention paid to Repairing.

☞ All work guaranteed to be done in a first-class manner, and at the lowest rates. 12v17ti

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

ap17-3m **113 Beale street, near Mission, S. F.**

Phœnix Iron Works.

FIRE-PROOF SAFES. PHŒNIX LABOR OMNIA VINCIT. WORKS BURGLAR-PROOF SAFES.

JONATHAN KITTREDGE, Propriator,

Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES,

Of a superior make. manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.

Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States

1v17tf

PACIFIC FILE WORKS,

No. 53 Beale Street, bet. Market and Mission,

SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

2v17-3m **T. G. DURNING & CO.**

GLASGOW

Iron and Metal Importing Company

Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE, Manage.

Removal.

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel, Files,

Etc., Shear, Spring, German, Plow, Blister and Toe Calk Steel; manufacturers of

Mill Picks, Sledges, Hammers, Picks,

Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

Have removed to **13 and 15 Fremont street,** near Market, San Francisco.

10v14qr

CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

143 Beale St., bet. Mission and Howard,

SAN FRANCISCO.

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17-qy **J. WEICHHART, Proprietor.**

BY MAIL.—The *Mining and Scientific Press* will be sent by mail to any part of the civilized world. In case of removal subscribers have only to inform us of the post office address of the old and new location, and the paper will be sent accordingly.

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

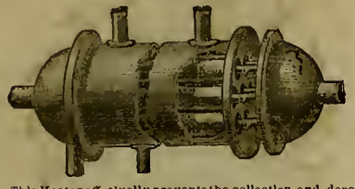
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, as I to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, **220** Fremont street,

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

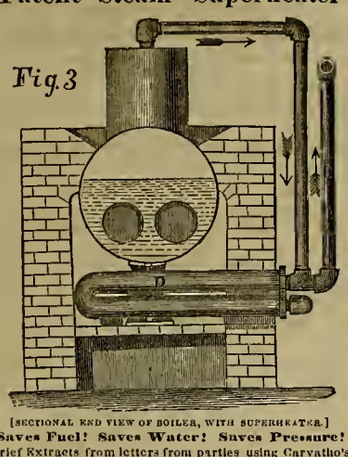
REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,
16v18-3m Patentee, Sacramento, Cal.

Important to every one using Steam for any purpose.

CARVALHO'S
Patent Steam Superheater



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1868.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 3, 1867 (after *seven* years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CROCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 55 deg—an increase of 20 deg."

CAREW MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

"Superheater saves at least 25 per cent in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming"

CONTRA COSTA LAUNDRY, Oakland, July, 1868.

"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. CO., Cal., August, 1868.

"Superheater causes a use of 40 lbs. steam instead of 60 lbs; use much less water, and there is a saving of fuel." (2 sets.)

SIXTH MECHANICS' INST. FAIR, S. F. Sept 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works better."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

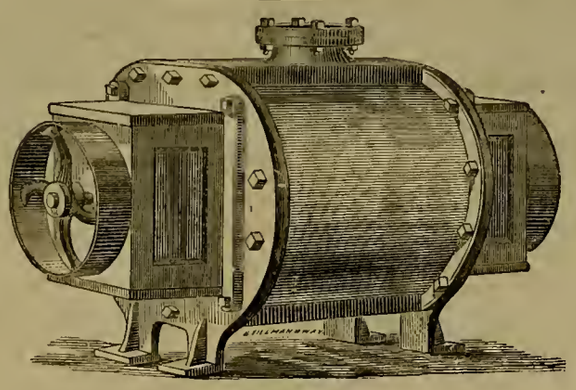
Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.
JOHN L. CONSTABLE, Engineer. 25v13tf

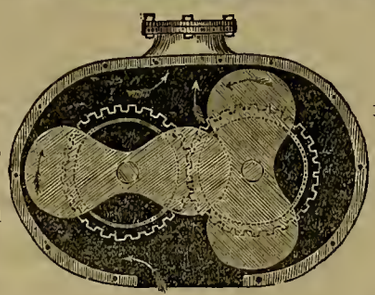
ROOT'S PATENT FORCE BLAST ROTARY BLOWER.
MANUFACTURED BY KEEP & BARGION,
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition.



Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER **Than any Blower** Now in use.

One of these Blowers may he seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

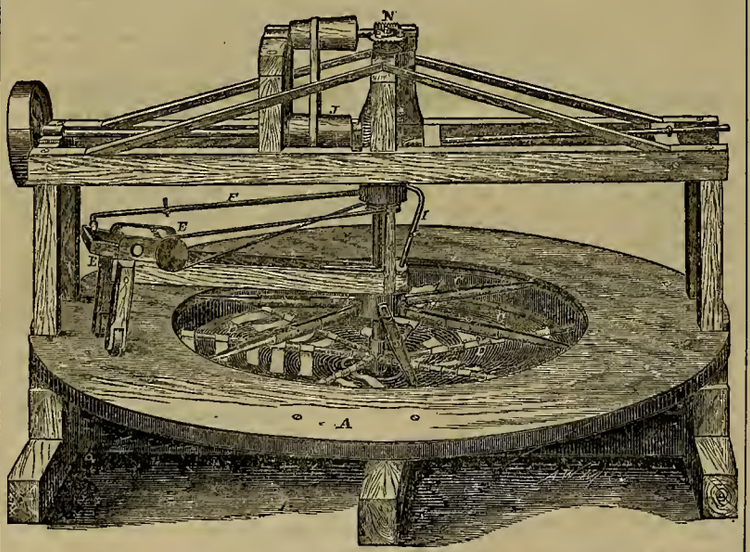
Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,
4v16 3m **Globe Iron Works, Stockton, Cal.**

PAINE & STEPHENS'
IMPROVED CONCENTRATOR,

For Saving Gold and Silver Sulphurets.



One Machine, costing about $1,300, is sufficient to work the Sands from 25 to 30 Stamps,

Less power being required than for any other Machine. The attention of quartz millmen throughout the State is directed to the subjoined certificates, and if they desire they can visit the Amador Mining Co's mill, near Sutter Creek, the Eureka Co's mill at Grass Valley, or the Banner Co's mill near Nevada, and see for themselves.

CERTIFCATES:

GRASS VALLEY, Jan. 4th, 1869.—This is to certify, that we have used the Paine, Stephens & Harry Concentrators for over twelve months. They have given us entire satisfaction, and are the best we ever used. WILLIAM WATT, Supt. Eureka Mine.

This is to certify, that we have had in use for the past 18 months one of Paine, Stephens & Co's Sulphuret Saving Machines, constructed by John T. Harry, (called a buddle,) and which operates satisfactorily, particularly so in saving fine sulphurets, and we recommend it as well worthy of use, even where other Concentrators are used above it, as it will pay if there are any sulphurets.

WM. L. TISDALE, Supt. Star Spangled Banner Mine.

NEVADA CITY, Oct. 26, 1868.

Any one wishing to purchase one of these useful machines, can do so by applying to THOS. N. PAINE, at Grass Valley, Nevada County, or JOHN T. HARRY, Sutter Creek, Amador County.

13v16eow

REBELLIOUS ORES.
THE HAGAN FURNACE.

The above method for the purification of Rebellious Ores is respectfully offered to the public. Repeated actual workings show that the

HAGAN FURNACE

Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

It has never been claimed for it that it will extract gold from ores which do not contain any of that metal.

Parties owning rich but refractory veins, can treat with the undersigned upon the basis of

GUARANTEED RESULTS,

With responsible security. For an interview, and all desired particulars, address

THE PACIFIC ORE CO.,
P. O. Box **1019**, San Francisco.
June 25 1869. 29v18-3m

RANSOME'S PATENT
Diamond Grit Grindstones,

Warranted of Uniform Texture,

TWICE AS STRONG AND WILL CUT AT LEAST TEN TIMES AS FAST AS THE BEST NATURAL STONES.

We manufacture the following qualities, viz:

"Hard," for Machinists, etc.
"Medium," for General Use.
"Soft," for Wood Workers, Etc.,

Diameters, **4** to **70** inches; thickness, ¼ inch to 12 inches; and any fineness required.

Solid Emery Wheels and Sharpening Stones,
Of all forms and materials.

These Stones are fast superseding the natural ones in England, the tests made there showing them to cut about fifty (50) times as fast as the Newcastle, and entirely free flaws, and hard and soft spots.

☞ Grindstones, with Frames, Iron Troughs, Shafts and Treadles, ready to set up in working order, for sale a wholesale or retail.

PACIFIC STONE COMPANY,
E. T. STEEN, Sup't.,
20v18tf Cor. Turk and Larkin sts. San Francisco.

Notice to Miners,
Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,
8v13-1y Stove Store, No. 1 Clay street, below Davis.

HAYWARD & COLEMAN
IMPORTERS AND REFINERS
—OF—
Illuminating, Lubricating,
—AND—
PAINT OILS,
CONSISTING OF
KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.
—ALSO—
Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!
An elegant and complete assortment.

SOLE IMPORTERS OF
Devoe's Illuminating Oil
PATENT CANS.
5v17-tf. **414 Front street**, San Francisco.

International Hotel,
JACKSON STREET
BETWEEN MONTGOMERY AND KEARNY STS.,
SAN FRANCISCO, CAL.

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from $1 50 to $2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents

21v12 [F. E. WEYGANT, Proprietor.

The "Cloud Bursts" of Nevada.

Residents in the Great Basin frequently speak of "clond bursts"—very remarkable sudden rain storms accompanied by thunder and lightning which take place in the summer time, and which seem, therefore, to have their origin in the Gulf of Mexico.

The rainy season of Sinaloa, Durango, Sonora, and partly of Arizona, takes place precisely at the hight of our dry season, and the storms come invariably from the Gulf. Standing on the peninsula of Lower California, and looking across the Gulf of California, there is frequently to be seen in midsnmmer a great wall of black rain and thunder cloud which has been heaped and rolled up by counter cnrrents of the atmosphere, hanging for days, or weeks, without being able to make any farther advance westward. This mass coming from the Gulf of Mexico, draws northward [item for the "Avitor"] into Arizona and Nevada; furnishing the moisture for some heavy interior forests, such as those on the Uintah Mountains, in sight from the railroad beyond Salt Lake.

So sudden are the "clond bnrsts" of Nevada, that the name can scarcely be said to be a misnomer. A cañon found so perfectly dry, by the traveler, that he would not suspect it of having been rejoiced with water for many a year, may, in the space of a few minutes, pour down upon him such a boiling flood as will make the locality if narrow and confined, absolutely dangerous to vehicles or horsemen. Woodmen with teams, we are told, are not unfrequently obliged to make a "run for it" in order to escape intact with their tools and belongings.

The pecnliar featnre of these "cloud bursts" is that they are local. Some cause, or causes combined embraced under electricity and temperatnre, effect the very sudden condensation of cloud vapors over one locality. On the 25th inst., a sudden storm of this kind took place at Austin, of which the *Reveille* says:

A cloud was seen to gathcr and bnrst on Central Hill, above and a little south of the Boston mill. It discharged a volume of water equal, we should say, to 400 inches, which came rushing down the cañon, and throngh the upper portion of the city. It maintained its full volume for a quarter of an hour, after which it subsided gradually.

Neptunian Craters.

In the limestone country of the Western States—in Michigan, for example, near Green Lake, Kent Connty—there exist perfectly formed craters in level alluvial soil, the resemblance of which to the inside of an old and weathered volcanic crater, is very remarkable. The depth and diameter vary, but are in the case referred to about 75x100 feet. Calling to mind the vacancy in an unfilled bullet-mold, they were accounted for by the hypothesis that when the earth was molded, there was found not quite enough material ou hand to fill np. The following, from an exchange, especially if remembered in connection with our remarks on caves in the Nevada limestone rocks, will furnish a clue—Neptune being caught in the act:

A portion of earth near the residence of Johnson, in Plainfield township, Michigan, sunk recently to a depth of eighty feet, carrying with it a number of trees and stnmps. The open space is funnel shaped, about seventy feet across the top. Some of the trees lodged half way down the side, while others went to the bottom, leaving the leaves and branches withiu reach of the mouth of the opening. Two or three stumps and a log about fonrteen feet in length thrown in, afterwards passed out of sight. A distant roaring sonnd as of rushing waters, is said to proceed from the chasm.

SILK is manufactured extensively in Patterson, N. J., New York City, Hartford, nnd other Eastern cities, out of material from France, Italy, Japan and China. So soon as California has cocoons to spare, the proprietors of those mills will no doubt come aftor them.

Information for Inventors and Patentees.

AN EXTRACT

From the American and Foreign Patent Agency Circular of the Mining and Scientific Press, Dewey & Co., Publishers.

Steps Necessary to Procure a Patent.

The FIRST thing reqnired is a model, if yonr invention can be represented by one. It is not only immediately necessary in preparing the papers, but the law demands that the inventor shall, in all cases, furnish a model, which must not exceed twelve inches in nny of its dimensions. A model of less size will answer when more convenient. It should he neatly made, of hard wood or metal, or both, and varnished or painted; the name of the inventor and the name of the article should be engraved or painted on it in a permanent manner.

When the invention consists of an improvement on some known machine, n full working model of the whole will not be necessary. It should he sufficiently perfect, however, to show, with clearness, the nature and operation of the invention, and the relation of tho new to the old parts of the machine.

As soon as the model is ready, it should be carefully boxed nnd shipped by express, or otherwiso, to our address, namely: DEWEY & CO., *Mining and Scientific Press, San Francisco.* Prepay expenses and send express receipt to us by mail.

A full description must also be sent with the model, embodying all the idcas and claims of the inventor respecting the improvement, describing the various parts and their operation.

Simultaneously with the model, the inventor should send us the first instalment of the Government fee, fifteen dollars. The money may be forwarded either by express with the model, or by registered letter, post office order, or by draft on San Francisco, payable to our order. Always send a letter with the model, and with the remittance, stating the name and address of the sender. On receipt of the model and Government first fee of $15 in currency, tho case is duly registered on our books, and the application proceeded with as fast as possible. When the documents are ready we send them to the inventor by mail, for his examination, signature and acknowledgement before a Notary Public or Justice of the Peace, with a letter of instruction, etc. Our fee for preparing the case is then due and will be called for. The case will then be presented to the Patent Office, and as soon as the patent is ordered to be issued the Government last fee of $20 in currency will be required. The law states that every patent shall be dated as of a day not later thnn six months nfter the time at which it was passed and allowed, and notice thereof sent to the applicant or his agent. And if tho final fee for such patent be not paid within the said six months, the patent shall be withheld, and at the expiration of two years the invention therein described shall become public property as against the applicant therefor.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separate ingredients, sufficient to make the experiment, (unless they are of n common and well known character), and also of the manufactured article itself must be furnished, with full description of the entire preparation.

For Processes, frequently no model or drawings are necessary. In such case the applicant has only to send us an exact description, and what it is desirable to claim.

For Designs no models are necessary. Duplicate drawings are required, and the specifications and other papers should be made up with care and accuracy. In some instances two photographs, with the negatives, answer well instead of drawings.

Inventors who do business with us will be notified of the state of their application in the Patent Office, when it is possible for us to do so. We do not require the personal attendance of the inventor, unless the invention is one of great complication, usually the business can be well done by correspondence.

The usual time required to secure a patent, when the case is conducted at our agency, is from one to two months. We sometimes get them through in two weeks. In rare cases, however, owing to delay on the part of Government officials, the period is sometimes extended for months. We make a special point to advance our cases as rapidly as possible, and have been successful in obtaining patents for this coast more surely and speedily than any other agency in the United States.

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SAN FRANCISCO, SATURDAY, JULY 17, 1869.

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Representative Men.

Some fifty or seventy-five gentlemen, capitalists, representing the chief cities of the Mississippi Valley and Atlantic Coast, have arrived in this city during the past week. "They come," so says report, "to prospect the State commercially; to see what they can buy or sell, or to search out a place in which to established a branch or an original business." Some of them will no doubt conclude that California is the best location that presents for certain classes of business, both foreign and domestic; and we presume a large proportion of these visitors will arrange for business relations on this coast, of greater or less magnitude, before they return.

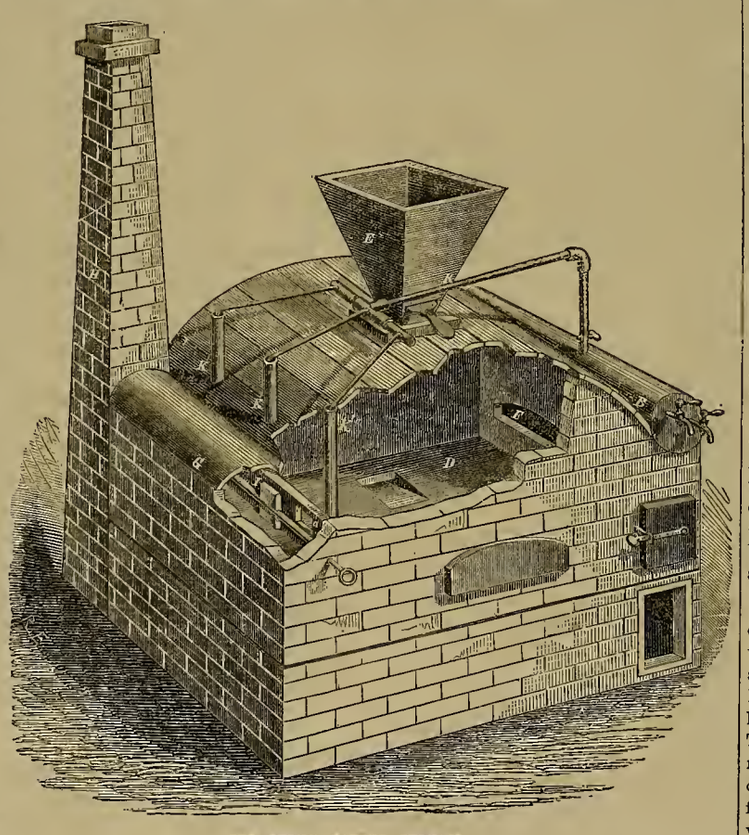
This movement is one which cannot fail to be productive of much good, in establishing commercial harmony and reciprocity between the emporium of the Pacific, and our Eastern cities. The East want teas, silks, etc., and come to San Francisco to see if some better mode of obtaining them cannot be devised, than the hitherto tedious passage around Cape Horn, or across the Isthmus. Much will also be done by this notable visit, towards still farther facilitating commercial relations between our Western and Eastern cities, and the new locations which are springing up all through the great interior of the continent, and now made tributary to the East and West by the completion of our great national highway.

THE INCREASE OF TEMPERATURE UNDER GROUND.—A committee, composed of Dr. Everett, Sir C. Lyell, Principal Forbes, Mr. J. C. Maxwell, Prof. Phillips, Mr. G. J. Symons, Mr. Balfour Stewart, Prof. Ramsay, Mr. Geikie, Mr. Glashier, Rev. Dr. Graham, Mr. E. W. Binnie, Mr. Geo. Mann and Mr. Pengelly, was appointed by the British Association at the Dundee meeting (1867), for the purpose of investigating the rate of increase of underground temperature downwards in various localities of dry land and under water, for which a sum amounting to £250 was placed at their disposal. The names are a guarantee that the investigation will be a searching one. The report may probably appear in the next volume of the transactions of the Association, which may be anticipated in the course of the current fall.

The Burns' Furnace at Meadow Lake.

The accompanying cut is after a drawing of Mr. Robert M. Burns' furnace, the principle of which has been tried at Meadow Lake, Nevada County, on a small scale.

"Certainly, some day,"—say the Truckee *Tribune*,—"some one will discover a process for the reduction of these ores, and when it is discovered and put in operation, Meadow Lake district will not be surpassed in the State; as it is, it must rest beneath its robe of snow, a deserted district." The auriferous iron pyrites of Meadow Lake contain $60 to $70 to the ton, but are more than usually "refractory," owing to the presence of other unfavorable mineral ingredients.



THE BURNS' PATENT FURNACE.

Mr. Burns claims to have solved the problem of profitable working. His method of procedure will be understood from the engraving, with the aid of a few words of explanation.

The ore is not pulverized, but is fed at once, in small pieces, through the hopper, E, into the chamber, D, where it is exposed to the influence of flame from the fireplace, F, and of steam from the pipes, K, K, K, obtained by heating water in the boiler, B, over the fireplace, whereby it is claimed that waste from volatilization or mechanical loss from draft is entirely prevented. A covered way, G, conducts the fumes to the chimney, H; a damper slide, I, being connected with a rod by which to regulate the draft. The time of roasting is about twenty-four hours.

At the end of that time the ore is drawn through the opening seen in the bottom of the furnace. It falls into a tank containing a solution, the exact operation of which is not fully understood. On drawing off the water into another tank the ore resembles ashes in consistency, and is said to be in a condition to be amalgamated with very favorable results.

Tests similar to those at Meadow Lake were recently made at Indian Valley, Plumas County, and parties witnessing the same have been so favorably impressed, we are told, that arrangements have been made for the construction of a furnace.

Mrs. Elizabeth Burns is the inventor of the process, as has already been published by the press throughout the State. After the patent is obtained, we may be at liberty to publish a more complete description—the solution used being a considerable portion of the invention.

Those desirous of obtaining further information on the subject, are referred to Robert M. Burns, Meadow Lake, Nevada County, or John H. Blood, Indian Valley, Plumas County. A patent for the above has been applied for through Dewey & Co.

Award of Bounties for Mulberries, Cocoons, etc.

The State Board of Judges met at Agricultural Hall, Sacramento, on Thursday, to make awards to the parties claiming bounties for plantations of mulberry trees, for cocoons, hops, and manufactures. Specimens of mulberry trees and cocoons, and worms in every stage of progress, were exhibited. The cocoons were very fine, and pronounced by competent judges the handsomest ever exhibited in the United States. By general consent it was conceded that the exhibit of Smith Brothers was the best.

Following are the names of exhibitors, the amounts claimed, and what for:

Mulberry Plantations of five thousand trees, over two years old, under the Act of 1866: I. N. Hoag, $6,125; C. W. Reed, Yolo, $8,875; John Smith, $500; Wm. M. Haynie, $300; E. F. Aiken, $375; J. T. Harbison, T. B. Flint; Leon Lambert, San Jose; M. Souffignon, San Jose; D. A. Merritt, T. G. H. Jones, and G. C. Holman, $250 each; A. P. Smith & Bro., $100; and G. L. Henry, $125;—making an aggregate of $18,150.

For Cocoons—Thos. A. Geary, $360.

For Hops—David Flint, $1,000.

The Agent of the Oakland Cotton Mills submitted for examination a bolt of cotton drilling, claiming therefor the bonus of $2,000.

The Mission Woolen Mills exhibit samples of tweeds, cassimeres, broad and pilot cloths, claiming therefor bounties amounting to $15,000.

After some considerable discussion, the claims of Messrs. Hoag, Reed, Harbison, Aiken, Haynie, John Smith and A.P. Smith, were severally allowed; as also were the claims of Mr. Geary for cocoons; of the Oakland C. M. Co., and for the Mission Woolen Mills for manufactures were also allowed—aggregating a total of $33,785.

ANOTHER ATLANTIC CABLE.—The French cable which is to connect the United States with the French port of Brest *via* St. Pierre, a French island just to the southward of New Foundland, has been successfully landed by the Great Eastern at St. Pierre. The length of cable paid out was 2,325 miles, or 861 miles longer than the English cable. The remaining portion of the cable from St. Pierre to its landing near Boston, will be 722 miles in length, and will soon be paid out by a ship, on board of which it has already been placed. The completion of this cable will no doubt have the effect to materially reduce the cost of European telegraphing.

SHODDY FOR UPHOLSTERY.—Mr. Phillip Hirlemen and Mr. Julius Inholsky, have started a shoddy and batting mill on Berry street, occupying a part of the ground floor in Emanuel's Planing Mill and Factory. The machinery was furnished by Berry & Co., of this city, and is of the most improved make. They design increasing the capabity of the mill in a short time. They manufacture wool and cotton shoddy for upholstery and other purposes, of various grades, and cotton batting and wadding.

Communications.

Account of Reveille and Adjoining Districts.

[Written for the Mining and Scientific Press.]

Since my return from Reveille, I have paid a little attention to the mines on the lower sides of Treasure Hill, with a view to the collection of some statistics and facts that would seem to have some hearing upon the question as to whether rich ores will be found at considerable depth—say from 500 to 1,000 feet from the top of the hill. I first visited the Virginia, situated on the north end of the hill a little below the Mammoth and "Omega," perhaps about half way in point of elevation from Hamilton to the summit of Treasure Hill. The works are on the left hand of the grade and can be easily seen on the way from Hamilton to Treasure City. I found at the mine, Mr. Geo. A. Willard, the recently appointed Superintendent, who, although a young man, seems to have the courtesy, the experience and the rustling business energy and promptitude necessary to make him a successful manager of a mine.

I confess myself much disappointed at the appearance of this mine. It is working twelve men at present. It has a tunnel 200 feet long, being nearly completed to the bottom of the shaft, which is 30 feet deep. Short drifts have been made each way. The shaft shows a body of ore apparently pitching southwest on a southeast and northwest course. A hundred feet southerly from the shaft, the lime cap is stripped off, showing two other bodies of ore about six or eight feet wide, pitching and bearing the same as the first or principal ledge. From the appearance of the 100-foot surface it would seem to be one grand body of ore, with strata of limestone interspersed. It seems to have more system and regularity than most deposits, and yet lacks the definite walls of a true fissure vein which may be found at a greater depth. There is a body of ore in sight. From the surface opening, including the shaft, thirty feet deep, and the two short drifts of ten feet, there has been piled upon the dump about 300 tons of milling ore, estimated from numerous assays at $250 per ton. Mr. Janin's dump sample was, as we learn, $255 per ton. Almost an unlimited amount of ore can be taken out as soon as mills can be obtained to crush it.

The Newark Mill, under the direction of Col. Avery, is about to commence on this rock at $50 per ton, roasting process, which process is necessary in reduction. I "cahhaged" under the eye of the Superintendent, two pieces from the dump, one weighing about eight pounds, and the other about two pounds, which assay a fraction over $2,000 to the ton.

Mr. Willard has a "theory" about the "belt" which looks quite plausible. He called my attention to the light appearance of the surface rock,—a belt two or three hundred feet wide running southeasterly and northwesterly in a direct line from the Phœnix and Featherstone, crossing the Hamilton grade, taking in the Virginia, Aladdin's Lamp, Mammoth, Shehoygan and Omega, and extending to and including the Pocotillo. Another party from Bullion Hill informs me that that Hill is a continuation of the same line and the same general belt. As to these theories I express no opinion; but others, acting upon the suggestion, can observe for themselves as they pass over the ground. The Virginia proper is 600 feet, and the Aladdin's Lamp adjoining, and now included in the incorporation, is 1,000 feet, for all of which there are 16,000 shares of stock, now under an assessment of $1.25 per share.

The Featherstone is situated on the lower hill, just back and west of Hamilton, and about half a mile from the Virginia. We found no one at the mine; but considerable work has been done, and considerable ore, apparently medium grade, is on the dump. The ledge is "faced up" some distance lengthwise, and stripped to a much greater distance. While it does not rank with the first-class mines, it shows sufficient positive mineral wealth, both in quantity and quality, to justify more extensive operations.

The Mammoth is situated just above the Virginia, and in close proximity. The works and extensive croppings are the most prominent feature on the Backbone of the hill, about three hundred yards north of and below Treasure Peak. The croppings are similar in general appearance to the croppings of the Virginia.

The Omega is the first south extension of the Mammoth, and the Shehoygan is a little above and to the west of the latter. The Mammoth Co. allege that the Shehoygan men are jumpers. However this may be, the latter have faced into the ledge about thirty feet lengthwise, which work exhibits its course and pitch much better than all the work done on the Mammoth claim. They have taken out considerable good ore, and apparently have a well-marked, broad ledge, dipping into the hill directly under the bottom of the Omega shaft. The Mammoth (if my memory serves me rightly) has the first location on the hill after the Hidden Treasure. The present holders or Trustees seem to think they have as good a thing as they want, and content themselves with "tracing out jumpers" rather than in developing the mine." They have made innumerable cuts, ditches and holes, one small attempt at a tunnel, and have done considerable work in "facing in" at the north end of the large croppings. There are five or six shafts, from fifteen to twenty-five feet deep, and drifts are being run from one shaft to another, and at all points they find large bodies of medium and low-grade ore, worth from $40 to $100 per ton. Of course selected pieces assay much higher. I saw an assay from the corner of a two-pound piece which gave $40 per ton; and the *whole* piece pounded up, and two different assays made from pulp, gave, one $274 per ton and the other $276. I have been informed that assays have been made as high as $1,600 per ton. Though they have found some chloride rock, yet neither it nor the exceptional high assays furnish a criterion by which to classify the valuation in its present state of development. These little smatterings of chlorides and exceptional assays may be received as indications of what may be found in the mine when it is fairly opened down to the level of the Virginia, or even a hundred feet. As it stands in its present state of development, it must be classed as a large mine, with almost unlimited quantities of from $50 to $100 rock, but liable at any time, in sinking, to strike rock as rich as the Virginia and Hidden Treasure, lying on either side of it. All the works both of the Sheboygan and Mammoth show the ledge, ledges or bodies to be on a line with the Virginia, and apparently to have the same course and dip into the mountain.

With one-tenth the expenditure, the Omega has done more than both the other mines together. It is simply good mining for this country. It is the difference between the concentrated action and energy of a single experienced brain and the divided counsels of larger companies. The Omega, calculating the dip on the ledge, started above on the side of the hill, and without "fuss or feathers," have sunk a shaft 85 feet, well timbered, in true miner's style. It is now in spar and some mineral, and if the ledge continues to dip, as at the Sheboygan, the shaft will be fairly into it at a depth of 100 or 120 feet.

So much for the mines on the north slope of the mountain which apparently pitch into the heart of Treasure Hill. In all cases where I have spoken of ledges, lodes, deposits or bodies of ore, I have used the terms as synonyms. I have no opinion on the subject of true "fissure veins." There seems to be some lode, some *mantas de plata*, some deposits, some little streaks and pockets; and sometimes the object of the miner's search is diffused in limestone and almost every other kind of rock which the country produces. God has made nothing in disorder—though it would appear otherwise here. In our next we will speak of claims on the other side of the mountain.

Las Minas.

Death of a Chemist.—Prof. H. Dussance, a chemist of some eminence, who has been a regular contributor to the columns of the *American Artisan* for several years, died suddenly at his residence in New Lebanon, N. Y., on Sunday night, June 20th. He was by birth a Frenchman, and had formerly been employed in the laboratories of the French Government, and had been Professor of Industrial Chemistry to the Polytechnic Institute, Paris. He had been many years in this country, and was the author of several works on industrial chemistry.

Universal Law.—Is Heat a Form of Matter?

[Written for the Mining and Scientific Press.]

All the physical and metaphysical theories of the ancient Egyptians were founded upon the principle that solar heat is the cause of life and motion, throughout creation. They point us to the influence of the sun, which is constantly exercising an omnipotent energy through air, ocean, and earth; producing climate, regulating seasons, and causing evaporation and rain. He fans the air with the atmosphere, and his alternate smiles and frowns give sunshine and storm.

Among the most enlightened nations of antiquity, elementary fire was regarded, not only as the most refined and spiritual essence of all the elements, but as a universal and self-acting principle, which they considered identical with existence or being. Learned etymologists have shown that the word "am" denoted both heat and existence, among the early Egyptians; who, believing it to be the cause of motion and organization throughout nature, inscribed it upon the great door of one of their temples.

As everything in nature is arranged by measure, number and weight, we are led to inquire, What is matter? In the first place, we are informed that matter is composed of exceedingly small, hard and unchangeable atoms, which vary in magnitude, and which are so arranged and combined as to produce an endless diversity of mineral, vegetable, and animal bodies. We are led to inquire further: Are those atoms divisible? If they are infinitely divisible, a finite body must consist of an infinite number of parts, which is a contradiction. It follows, then, that matter must consist of ultimate atoms, and that being compressible, the atoms not being in contact one with the other, it must be surrounded by some elastic medium. The celebrated Doctor Black, when he discovered latent or combined heat, and proved by accurate experiments that definite measures of heat or caloric are required to convert solids into liquids, and that the same subtle fluid is obtained from the atmosphere, by respiration, he uncovered a great truth.

But electricity has been put forth as accomplishing the same thing, and is called the key to unlock the cabinet of nature. Franklin and Faraday called it a material fluid, and have said definite measures thereof belong to each element of ponderable matter. Prof. Davy, Arago, and others, found that electricity is capable of producing all the phenomena of magnetic action, on a small scale. They succeeded in producing an electric spark, from a permanent magnet, and arrived at the conclusion that electricity and magnetism are identical. It has been demonstrated, experimentally, by numerous philosophers, that all varieties of electricity are essentially the same. What can be more different than ice water and steam; yet they are composed of the same elements, combined with different proportions of caloric. What can be more unlike than the opposite forces of attraction and repulsion, contraction and expansion; yet it has been proved that they are both produced by caloric, under certain conditions. Caloric unites atoms of matter, as in chemical union, and under other conditions destroys this chemical union, as in vapor and combustion. If caloric is the physical cause of all motion, then what is electricity but the same thing, in a modified condition; only that electricity is developed under certain conditions; while caloric is manufactured under all conditions, while the sun exists.

What is this caloric or heat? Is it material or not—is it cause or effect? Upon the answer to this question a great mystery depends. Chemists and philosophers are divided. Rumford, Tyndall, and others, deny its materiality, and assert it to be an effect only of motion. If this is so, then what is the cause of motion? The answer would be, Force, which is a power capable of originating motion, supposing everything at rest, and may be traced to attraction and repulsion, or the primary and visible effects of these two forces as exhibited in the expansion and contraction of matter.

Now if it is true, that the elastic force of bodies is augmented by every addition and diminished by every abstraction of caloric, is it not proof that caloric is the cause, and not the effect, of attraction and repulsion? Then as to its materiality, it has been estimated by Issac Newton and others that the atoms of all bodies are surrounded by an elastic medium, which prevents contact, and that the pores of gold occupy about the same space as its solid atoms, and that water pores are forty times greater than its solid atoms, and that every change in temperature is attended with motion. Among the particles of bodies, it shows that caloric is a self-active principle, and if it is true that all bodies are full of caloric, that it occupies 827 parts, by volume, of the atmosphere, and 1,719 parts of steam, it must constitute the greater part of the globe we inhabit; in bulk, it must be material, as all good thermometers will show. With mathematical certainty it is self-evident that it augments the volumes of solids, liquids and gases, which are again reduced by abstracting what was added; that it passes by radiation through the most perfect vacuum, and shows the same effects as in the atmosphere; that it exerts mechanical and chemical forces which nothing can restrain, as in volcanos, explosion of gunpowder, nitroglycerine, etc.; it operates sensibly on the nervous system, giving pain and disorder when in excess; that it modifies the forms, properties and conditions, of all other bodies in an endless variety of ways, is presumptive evidence of its materiality.

W.

Abolition of Patent Rights in England.

The subject has been seriously discussed in the English House of Commons of abolishing the entire patent system. The accomplishment of such a backward step would be deeply deplored by every intelligent citizen who delights in the progress of invention, art and science.

Some of the numerous reasons why inventors should be encouraged and protected, are well set forth in the protest against repealing the laws, by the "Inventors' Institute," as follows:

1. It is the duty of the state to encourage invention by every legitimate means, in order to enable this country to maintain its supremacy in mechanical and chemical arts.

2. That the inventor is entitled to reasonable remuneration for his labor, expenditure, and skill, equally as much as the author or the artist is entitled to copyright for his book or work of art.

3. That the patent system, though defective, is the best practical method of remunerating inventors yet devised, inasmuch as under it those persons only who use inventions, and to whom, therefore, they may be assumed to be of service, pay for their use.

4. Experience shows that no system of rewards from the state could ever be made to work satisfactorily, either in the interests of inventors or the public.

5. The inventor, as distinct from the manufacturer, has a right to be heard before the patent laws are abolished or materially altered.

6. Inventors—and especially those belonging to the working classes, to which classes the great majority of inventors belong—are entirely opposed to the abolition of the patent laws, though they earnestly desire their amendment.

7. That by a good system of patent law the progress of the trade and industry of the country would be largely benefited, as the whole inventive talent of the nation will be thereby incited to strenuous and continued efforts to maintain our industrial position against the very active pressure of foreign competition now affecting our commercial prosperity.

8. The workingmen, who are largely represented by the present deputation, are especially anxious to find themselves in position, under an amended patent law, in which they can not only safely exhibit their inventions in public, but be enabled to reap the fruits of improved education and increased application of invention.

The English patent laws are nearly as cumbersome as the "great seal" (composed of three or four pounds of sealing wax), which is attached to all patents when issued; but this is no reason why the laws should be entirely abolished.

Mechanical Progress.

The Black Sea Cable.

The Indo-European Telegraph Company will soon lay down between the Crimea and a point on the Asiatic shore of the Black Sea, the cable just completed for it by the Messrs. Siemens. The *Mechanics' Magazine* thus describes the manner of preparing the copper sheating which protects the double serving of best Italian hemp that surrounds the core of copper and gutta percha:

"The sheathing is of strips of flat copper ¾ inch in diameter, laid helically. The copper selected is of the best quality, and arrives in the shape of long broad sheets. These sheets are first passed through the shearing machine, where, by means of knives placed above and below, the entire sheet, as it passes through, is divided throughout its breadth into equal narrow strips of the breadth required. On coming away from the shearing machine the strips are wound on small bobbins. If a strip of metal or anything be attempted to be wound around a long cylinder, it will infallibly bulge up and tend toward the trumpet form, and in order to prevent such a result happening to the copper strip in the cable, it undergoes a process termed "rabbeting." Each strip, before going to the sheathing machine, passes through this operation, which consists in slightly bending its edge and grooving its center. The bobbins are then taken to the closing machine for the final process. After two servings, in reverse directions, each of twenty compound strands of hemp, the cable receives its external protection of copper sheathing, which consists of four strips of the prepared copper, laid helically, one strip overlapping the other for one-half its breadth. In consequence of the strip being previously prepared, the cable comes out nice and smooth, and coils most readily, being exceedingly flexible and easily managed. The strips of copper are soldered into continuous lengths, care being taken that no two joints be allowed within a certain distance of each other."

Combined Air and Steam Engine.—We find in *Engineering* the following description of Warsop's engine, lately tested at Nottingham: "The engine being started by steam in the ordinary manner, a single-acting air pump, worked from the crank-shaft, compresses air to a little more than the boiler pressure, the air thus passing through a long circuit of straight and coiled pipe, which traverses the exhaust pipe, makes several spiral coils in the chimney, then descends at one side of the fire-box, exposed to the full fire, and finally connects with a valve-box, through which the air, more or less heated, enters the boiler at the bottom of the water space. So far as the experiments—carefully made upon an imperfect engine, worked alternately with steam alone and with steam and air—can be taken as establishing a principle, they indicate a considerable economy—an economy, however, beyond anything which, as yet, is inferable from theory."

Photographic Seals.—The *Journal of Applied Chemistry* describes an application of Woodward's photographic process,—of which we have already made mention,—by which a Freiberg photographer prepares seals and stamps bearing the likeness of his customers. A thin layer of gelatin sensitized with bi-chromate of potash is exposed to the action of light under a photographic positive by which the parts acted upon are rendered insoluble in water. The gelatin film is immersed in water, and the parts not acted upon by light swell up, and we obtain a picture in relief, of which a plaster cast can be taken. A galvano-plastic copy being taken of the cast we have a metallic fac-simile of the photograph, which can be employed as a seal. The journal above named says: "It suggests a method for obtaining perfect likenesses of persons in metallic *cliches* for the printer, and also an admirable way of illustrating scientific books."

Steel vs. Iron.—The railroad from Paris to Marseilles is to be entirely relaid with steel rails in place of the present iron ones. It will require one hundred and thirty-seven thousand tons of steel. It is expected that instead of four years, the present limit of wear in the vicinity of the stations, the new rails will last thirty. The bridges on the same road will also soon be rebuilt of steel.

Photographic Paper.—W. H. Davis gives the following in the British *Journal of Photography*: "My method for preparing the surface—is the following for direct printing: Take from four to six grains of gelatine, soak it in an ounce of water for an hour, then melt it gently over a fire, using a clean earthen pipkin. When fully dissolved, add to it, while yet warm, and stirring it gently during the mixing, from four to six drachms of a solution of lac in methylated spirit, made in the proportion of six ounces of spirit to one of lac, and digesting it till dissolved. The mixture of the gelatine and gum lac in spirits produces a creamy-looking emulsion, to which is added four grains of chloride of sodium, or its equivalent of chloride of ammonium or barium. When fully dissolved, filter through fine muslin into a clean pipkin, and it is ready for use.

"I apply warm with a flat camel's-hair brush. When the paper is dry it is ready for sensitizing, which may be done by flotation on the ordinary printing bath, or by brushing on the silver solution. I prefer to use the ammonio-nitrate solution brushed on. I use forty grains of silver to the ounce of water."

Smoke.—"The evil begins and ends,—says the Pittsburg *Commercial*,—with firing. Generally speaking, any man who has strength sufficient to wield a shovel, and wit enough to keep sober, will do for a fireman. We have seen one of these, called an excellent fireman, set aside by a man who understood the art, and who produced more steam with two-thirds of the fuel and about two-thirds of the labor. Having built his fire to the proper hight, instead of cramming fresh fuel in in such a manner as to keep it black, or in a fitful blaze, he managed, with comparatively little exercise, to keep it red. The result was, the decrease of smoke was as remarkable as the saving of fuel. We argue from this that one of the first steps toward the prevention of smoke in this city, and the saving of fuel, would be secured simply by placing a premium upon firemen who understand their business and make it a study."

Self-Registering Compass.—The "Albini Compass" keeps a record of the course steered by the vessel. The compass card carries on its under side, and near its periphery, a number of types, which correspond with those on the upper side of the card. A continuous strip of paper, moved by clockwork, passes under the card at that side which is next the bow of the vessel, and between this paper strip and the card itself is an inked tape, which travels slowly. At frequent regular intervals the compass card is tilted, so as to bring the type which happen to be immediately above the paper strip at the time down upon the inked tape, bringing the latter in contact with the paper, and marking upon the latter the letters denoting the course which the vessel is steering at that moment.

A Thirty-foot Paper Boat.—The Portland *Argus* says, Walter Brown has a paper boat, of the Waters' patent, from a model of his own. This boat is 31½ feet long, 12 inches wide, and weighs but 22 pounds. The lightest wooden boat ever made of similar dimensions weighed 41 pounds. The boat is more than four times stronger than one of wood. All of it, save where the sculler sits, is gas-tight, so that in the event of a race sufficient gas may be taken into it to reduce its weight to 8 lbs.

Combined Liquid and Solid Fuel.—An English inventor has patented an arrangement for burning petroleum or other liquid fuel in combination with solid fuel; the latter being reduced to dust, and blown into the furnace. Complete combustion of the solid fuel is by this means obtained. The liquid is admitted into a jet of air forced into the furnace by means of a fan.

Copal Varnish.—This should be made by dissolving one part, by weight, of camphor, in twelve parts of ether; Then four parts of the best copal resin, reduced to powder, are added to this in a well-stoppered bottle. As soon as the copal has become swollen, four parts of strong alcohol, and ¼ part of oil of turpentine are added. After shaking the mixture, and letting it stand for a few hours longer, a thoroughly good copal varnish is obtained.—*Bottger*.

Writing on Glass.—A solution of fluorine of ammonium is recommended as furnishing a ready means of writing with a pen of any kind upon glass, and is especially adapted for labeling bottles, cylinder-tubes, etc., in the laboratory, as well as for marking the degrees upon hydrometers and apparatus of similar construction.

Scientific Progress.

The August Eclipse.

The total eclipse of the sun, on the 7th of August next, is the only one which will be visible in America during the remainder of the present century. As a partial eclipse it will be visible all over the northern parts of the continent, while the path of the umbra in which the eclipse will be total is about 143 miles in breadth, entering the United States near the origin of Milk river, longitude 30° W., thence diagonally through Iowa and Illinois, crossing the Ohio near Louisville, Ky.; thence through North Carolina, entering the Atlantic just north of Beaufort, and ending at sunset in the ocean, in latitude 31 deg., 15 min., 2 sec. N.; and longitude 9 deg., 34 min., 6 sec. E. In Washington City the umbra commences at 5 h. 2 min. P. M., and ends at 9 h. 52 min. P. M. Prof. Hall, of the Naval Observatory, and Mr. Joseph A. Rodgers, of the Hydrographic Office, left Behring's Straits, under orders from the Navy Department, to take observations in that quarter, at which place the eclipse makes its advent. Professors Simon Newcomb, Wm. Harkness, and J. R. Eastman, of the Naval Observatory, have been ordered to Iowa, each to take observations, acting independent of one another. Professor Newcomb will take with him the largest object glass from the Naval Observatory he can procure, and search for asteroids between Mercury and the sun. Leverier thought that a zone of planets existed between Mercury and the sun. They have never yet been discovered, and no hopes are entertained of their discovery, (if they exist), except during a full eclipse. Prof. Harkness will make observations with the spectroscope. Dr. Curtis, of the army, will accompany the observers, taking with him the large equatorial from the United States Naval Academy, loaned to the Observatory by Vice Admiral Porter for photographic observations. Prof. Eastman will make meteorological observations.

Dr. C. H. F. Peters, Director of Hamilton College Observatory, has organized an expedition for taking observations. It will be provided with two telescopes, two chronometers, and a spectroscope. Des Moines, Iowa, has been selected as the point of observation. The party will consist of three,—Dr. Peters, Wm. A. Rogers, of the Sheffield Scientific School, and F. M. Nall, of New York.

Comet Composed of Carbon Vapor.

In the Proceedings of the Royal Society, Mr. Huggins gives an account of his observations upon Comet II of 1868. "When the light from its head was examined with a spectroscope having two prisms of 60°, three bright bands were observed. On comparing these bands with those of other spectra, it was found that they coincided exactly with those given under certain conditions. Thus in 1864, Mr. Huggins had observed that when the spark from an induction coil with leyden jars in circuit, was taken in a current of olefiant gas, the spectrum shown coincided with the carbon spectrum obtained under other conditions, except that no separate, strong lines were to be distinguished, and in place of the shading composed of fine lines, found in what might be called the normal carbon spectrum, that for instance of the spark in olive oil, an irresolvable nebulous light was given. On the 2d of June, 1868, the spectrum of the comet was compared directly with the spectrum of the spark in olefiant gas, and the identity of position and character between the bands was then very manifest.

We are thus led to the strange conclusion that this comet is composed of luminous carbon vapor. Now we know, that to vaporize carbon, as we have it within the range of experiment, requires heat of great intensity and peculiar conditions of chemical reaction, as in the case of a jet of olefiant gas supplied with air, which gives a greenish flame, resolvable into the carbon spectrum. How any such conditions of temperature as those developed by the induction spark which produces carbon vapor directly, or those of the mixed air and gas flame where it is indirectly developed, can subsist in a comet, we are at a loss to imagine. This mystery, however, does not stand alone, for in the case of the gaseous nebulæ we have a like example of self-luminous gas maintaining its luminosity with a similar absence of adequate cause. It would appear possible that some action related to phosphorescence or to fluorescence might be concerned in this result, but such a conjecture is unsupported by any evidence of similarity between the spectra of bodies exhibiting these appearances, and of these celestial objects. We can then simply regard this comet as a vast globe of glowing carbon vapor, having a density approaching that of our atmosphere, maintained in its luminous state by forces and conditions of which we have absolutely no knowledge."

Life a Molecular Property.—"B," in the Yale College *Courant*, after referring to Prof. Haeckel's discovery of the organism which he named *Protogenes*,—the simplest form of life, a mere drop of living jelly,—says:

"The *cell* has always been the refuge of vitalists; when science has attempted to show that the so-called vital force, formerly regarded as something mysterious and sacred, is nothing but a transmuted sun-power, and that its phenomena have a purely chemical and physical origin, the objection is instantly urged "neither chemical nor physical force has yet produced a cell;" the inference manifestly being that the cell is absolutely necessary to the phenomena of life. But now comes in Haeckel's discovery of an organism which is capable of taking solid nutriment like an animal, and yet which is absolutely devoid of structure—that is to say, of any structure except the molecular structure possessed by all colloid matter; an organism which is not a cell itself, and does not contain either cells or nuclei! Well does Prof. Huxley remark: 'Its existence proves life to be a *molecular* property, and shows that organization is the product of life, not life the product of organization.' If the properties of water may be properly said to result from the nature and disposition of its component molecules, I can find no intelligible ground for refusing to say that the properties of protoplasm result from the nature and disposition of its molecules."

Telegraph Wires During Auroral Displays.—In reference to the currents produced in the wires during auroral exhibitions, *The Journal of The Telegraph*, says: "Although there are, unquestionably, large masses of electric clouds sailing in the upper regions of the air during the presence of these displays, yet the fact that all, or nearly all, interference form the currents then exhibited can be prevented by simply using two wires instead of the earth and wire, proves that these currents are caused by a disturbance of the earth's electric state. Its ordinary electric tension is disturbed, and its currents are, so to speak, scattered by this induced current from the vast masses of electricity in the sky, but are ever seeking to restore themselves to their normal condition; thus causing temporary electric currents of great power and rapid changes of tension. Thus they enter a wire from one earth connection in this effort at restoration, and are chased ack by another current from the opposite end, exhibiting the violent and changeful currents which mark these magnetic storms. The earth, itself, is a great reservoir of electricity, offering no sensible resistance to the entrance of electrical currents, yet varying in its electric tension at different points. This causes an almost ceaseless action of the currents, and at almost all times they can be felt upon the wires which they use to effect the equalization. During the auroral displays this action is excessive. At the same time it can scarcely be regarded as incorrect to say that it is the induction of vast volumes of electricity from the upper air which causes these currents; and as a line can be worked by any polarity, provided the wire is worked with a like polarity, the changing currents do not prevent the line from being operated during the violent contest for the supremacy of the one current or the other."

Nature of Comets.—M. Bionne has submitted the following opinion upon the nature of comets to the Academy of Sciences: "Comets are bodies which describe spirals originating in a nebula terminating in the sun; each spiral may be considered as an ellipse. Formed of the incandescent matter of the nebulæ, comets would appear to be the regulators of the grand movement of celestial bodies, the agents of that vast transformation of calorific work into mechanical work, and would come at the end of their course to lose themselves in the atmosphere of the sun, to which they would serve as an aliment."

Farming and Gardening.

The Fowler Steam Plow.

The only steam plow which appears to bave met with any marked success in England, is that invented hy Mr. John Fowler, of Leeds, which is constructed upon the principle of a direct pull upon the implement, as in ordinary plowing. This plow is constructed in gangs, and is dragged across the field by a locomotive engine, which is moved along one side of the field. An "anchor," or vehicles with sharp wheels cutting deep into the ground, is moved upon the opposite side. An endless wire rope is passed from the engine over a pulley on the " anchor," and hack to the engine. The plow is attached to tbis rope, and dragged from the engine to the pulley, there reversed, and brought back to the engine. It is a halance plow, supported on two wheels in the center—one set of plows taking the ground when going one way, and the other set when going the other way, balancing upon the axle hetween the two wheels as a pivot. The engine and anchor are moved ahead with each trip of the plow. The cost of one of these plows is from $8,000 to $10,000.

One of these plows was received in this country, some three years ago; and so important was the enterprise considered, as leading the way to the introduction of steam plowing in the United States, that the duties on the plow were remitted hy especial act of Congress. This plow is now in successful operation on the sugar plantation of Mr. H. E. Lawrence, ahont forty miles below New Orleans. It turns the soil, when required, to the depth of from 12 to 14 inches; and two hands are sufficient for its management.

In addition to the plow there is also a scarifier or cultivator, designed for light work; an extra strong gruhher, for eradicating roots and stones, and a harrow; the two former being constructed, like the plow, as balance machines. There is also a suhsoil plow connected witb this invention, whicb will enter a stiff clay soil to the depth of from two to twenty-five inches—six in a gang—with coulters baving palms as large as a man's hand.

An interesting trial of one of these machines was made about a year ago on a large farm of 32,000 acres, helonging to Col. W. C. Patterson, near Burlington, N. J., and in the presence of the Commissioner of Agricultnre, and nnmerons other gentlemen largely interested in agriculture. The trial was continned for several days, and gave very general satisfaction. This plow has been used there for some two years. The one employed consists of twelve plows—six working in a gang, and is driven by two 14-horse-power engines, one working at each side of the field, instead of nsing an anchor on one side. The length of furrow is sixty rods; breadtb oultivated at one movement, 6¼ feet; depth eight inches. From 18 to 25 acres, according to the nature of the ground, can be plowed in twelve hours.

Tbere is another of these plows at work upon a Western farm, the looality of which we are not acquainted with. It may not be out of plaoe to state that tbe principle upon which this machine is oonstructed was first applied to an American iuvention more than thirty years ago.

Arboriculture, scientifically pursued, is one of the most pleasing occupations which man can follow. In the latest published report of the British Association for the Advancement of Science, it is stated that even in that *cleared* country, trees occupy one-twenty-second part of its entire area; that to every eleven acres of cultivated land there is one covered with wood, and one acre to every sixteen uncultivated. The gross annual value of the wood crop is estimated to rise up to $12,500,000.

A California Dairy.

A Monterey correspondent of the *Bulletin* describes a dairy in the Salinas valley, helonging to Mr. C. S. Ahbott, where *nine hundred* cows are milked. This dairy is only ahout three years old; is described as heing laid out and conducted on the most approved system, and is said to be a complete success.

If the description is correct, this is prohably the second dairy, in point of extent, in the United States. The locality of the first we have not just now at hand, but what has heretofore heeu pronounced the *second* in size, helongs to O. F. Leser & Co., and is located a few miles back of the city of St. Louis. As there are only 800 cows milked at that estahlishment, it must stand hehind our big California dairy; which, in all prohahility, is the second in point of size in the Uuion.

It is one of the most incomprchensihle things connected with the agricultural interests of this coast, that we should import even a single pound of hutter from the Eastern States—much more that we should receive from that source over one-half of all we consume. During the past week no less than 1,794 firkins of Eastern hutter have reached this city, from New York, by steamer; while over 60 tons additional, have been received at Sacramento, by railroad, for Chicago. Why is it that one of the finest grazing regions in the world cannot furnish its own hutter, when the producers are protected by a transit of over 2,000 miles of railroad in one direction, and more than 5,000 miles of steamship carriage in the other?

We trnst that the enterprise of Mr. Abbott will serve to convince our farmers that there is money to be made in every well conducted dairy that may he properly estahlished ou this coast, until the aggregate supply exceeds the entire demand for butter and cheese, this side of the Rocky mountains.

A New Agricultural Section.—The Oregon *Farmer* learns from a private letter that "a party of three men recently made a prospecting trip into the interior of Clatsop County in search of minerals. They did not discover any thing of that kind which they believed to be valuable, hut they found some very good country for settlement. One of the party, through whom we received this information, has resided iu Clatsop county for twenty-five years. 'There is very little yet kuown of the interior of the county." Clatsop is the extreme northwestern county of Oregon, lying on the south side of the mouth of the Columhia and bordering some 35 miles on that river, and about the same distance on the Paoific Ocean.

A Canvas Corral.—The Oregon *Unionist* describes, as follows, something quite novel, and which, under some circumstances, must be of great advantage to sheep-growers: "The Salem Bag Factory has brought out a canvas sheep corral. The enclosure made by the oanvas is 150 feet square, and 3½ feet high. The herders will carry this with them, and when night comes, they stretch it and drive the herd into it. It is estimated that a pen of one hundred and fifty feet square will hold a thousand sheep."

Grafting Potatoes.—The latest novelty in the fancy line upon the farm is grafting potatoes. The mode of operation is as follows:—Take one of each variety, the good qnalities of which it is wished to combine; with a pocket knife cut all the eyes clearly out of one of them, and substitute in their places the eyes cut out of the other. The eyes to he iuserted should he sprouted and cut in the same shape and size in the other potato; they are held in place by hair-pins, and bound with bass matting or twine. The fit must be exact, and the rind of each must just meet. The grafted potatoes are then to he planted. As some of the grafts may fail, it is well to operate on a dozen or more sets at a time. The produce of these grafted potatoes are to he kept separate and planted out the following year, when their qualities will be proved. Many varieties will sometimes result from graftiug only two kinds into each other, and the results are said to have astonished the originator of the system, as two reds "have produced a white potato." Kidneys and rounds grafted into each other produced rounds, mottled aud kidneys, differing from hoth parents.

Cows, Horses and Sheep fed on Fish.

Farmers on the shores of the State of Maine have taught their sheep to live on fish. They report to the Agricultural Society that a single fish makes a meal for a sheep; that it is eaten with relish; that it fattens and keeps tbe animal in fine condition. Nothing is said of the effect produced upon the wool or the flavor of the meat; which the latter we suspect to be no improvement. Nor is any remark given on chewing the cud. To many stomachs, mutton in its best estate tickles the wrong way. We are not squeamish, hut carnivorous mutton would need a deal of saucing to grease tho incline to our bread-basket. *Exchange.*

The above, printed under the head "New Food for Sheep," which is going the rounds of the press, may be new to the stock-growers of the United States; hnt it is an ancient and very common practice in some portions of the world, where grass is particularly scarce. Fraser, in his "Travels," notes the fact, and says that in some portions of Western Asia, fish forms the chief article of food, not only for sheep, but for cows and horses, as well. The fish are dried, pounded and sparingly sprinkled with salt. The cows become very fond of snch food; which is often mixed with other suhstances, sometimes with pounded date stones. The natives assert that the flavor of the milk is not at all injured by this diet; but that the cows drink much water and thereby greatly increase the quantity, without in the loast diminishing the quality. Sheep and horses thrive equally as well as tho cows.

What the effect may he upon the flavor of the meat, we are not told. We shonld snppose, however, that the mode of mixing water with the milk, indicated above, would he much preferable to that so greatly employed in this country.

California Grain to Europe.—It is mentioned, by the Eastern papers, as a singular fact that California is ahle to send grain to Liverpool cheaper than any State of the Mississippi Valley. The chief reason why wheat can he produced cheaper here arises from the fact that the average yield in California is about double the yield per acre of the Western States; while the cost of taking 30 hushels from an acre is bnt a trifle more than that for planting and harvesting 15 bushels. If onr farmers would, by careful cultivation, increase our average yield per acre, as they might do 50 per cent. over that at present realized, the clear profit to growers would be increased fully one-half of that per cent.

The Government Agricultural Report for May and June, shows a high average condition of wheat throughout the country, while other grains are also promising well. The corn crop is not so flattering. The cotton crop, it is thought, will bo so mnch increased as to materially affect the price. The good weather, of late, has produced a wonderful and most favorable change in the prospect of this crop. The prospects of the fruit crop, are also, as a general thing, favorable. The *American Agriculturist*, generally well informed on such matters, expresses substantially the same opinion in its July issue.

A New Potato Growing from an Old One.—A correspondent of the *American Agriculturist*, sends to that paper, from Virden, Ill., an old potato, with a new potato growing from its side. That paper says such a thing is nothing new; but often occurs when potatoes are kept sufficiently warm to start into growth, and are kept perfectly free from light.

Items in Brief.

The Wheat Market.—California Wheat was quoted in Liverpool, on Saturday last, at 10s. 8d.—ahout four cents higher, per cental thau last previous report. Wheat growers will do well to watch, closely, the European quotations.

Wheat Exports.—Onr Wheat exports for the past three years may be stated, in round numbers, as follows, commencing with 1866-67: 5,100,000 centals; 5,050,000 centals; 5,750,000 centals. It may now be safely asserted that the exports for 1869-70 will materially exceed the latter amount.

Wheat on the Banks.—Large quantities of wheat are said to he waiting upon the banks of the interior rivers, and elsewhere, for transportation to this city.

Tall Oats.—Mr. Fairfield, Snperintendent of the Round Valley Reservation, is raising a species of oats, unlike anything hitherto seen in this region. The stalks are seven feet high, three qnarters of an inch in diameter, with laterals two feet long. The heads measure from two to three feet on the stalk. The seed was received from the Patent Office.

Tall Wheat.—They are raising wheat on the Pauay Ranch, near San Diego, six feet high, with large plump herries; 600 acres of wheat it is thought will average 45 hnshels to the acre. This, it should be recollected, is iu a region which has hitherto not been considered very favorable for wheat growing.

New Melon Seed.—Dr. Holden, of Stockton, has received some melon seed from the Agricultural Department, said to be choice and new. They came to hand too late for planting this season. A variety known as the Ioniau melon, was purchased ahroad for the Department at a cost of $120 per pound. Our consuls in all parts of the world, are especially active at this time in their inquiries for new and valuable varieties of seeds and plants, for transmissiou to Washington, from whence they are distrihuted through the country.

Good Yield.—A field of harley has been harvested, on the Honecut, which yielded 48 hushels to the acre.

Sale of Barley.—Some 200 tons of new harley was sold at Sacramento, on the 3d inst. for $1.02 per cental.

Apricots, measuring 7¼ inches, 'have been raised in the Chico Farm orchard.

Roses on Apple Trees.—An Illinois horticulturist grows roses on apple trees.

Mountain Strawberries.—A resident of Nevada City has received $140 for strawherries, raised upon a piece of ground 100 feet square, in one month.

Mountain Grazing.—Large droves of stock are heing driven into the mountains, in all directions, on acconnt of tho scarcity of food on the plains.

Flax in Santa Cruz County.—The Watsonville *Pajaronian* of June 7th says: "Peter Storm, who lives just outside the town limits, has a field of sixty-five acres planted to flax, which is growing finely, and will give a large yield of seed and straw. Mr. Storm has contracted to sell all of his flax straw at $50 per ton to the San Lorenzo Paper Mills, and other parties have agreed to take all the seed raised at four cents per pound. One acre of land will yield from two and a half to three tons of straw, and ahout 1,800 pounds of flax-seed. Tbns it will be seen that flax-raising is much more profitable than wheat growing.

Ripening Wines hy snhjecting them to a high temperature has been tested hy a numher of Los Angeles grapegrowers, and in every instance has proved successful. Mr. Keller maintains a temperature of ahout 130° in his wine house, by keeping fires burning constantly for months. The improvement in wiue so treated is so marked as to leave no room to douht that in one year ripening is advanced equal to four or five years by the ordinary let-alone way.

A Large Cucumber.—The longest cucumber, says the Sutter *Banner*, we ever saw was shown to us a few days since hy Mr. E. R. Reed, which measured three feet and six inches in length, and seven inches in circumference.

Ozone—The Great Coil.—The coil, is probably destined to throw new light upon scientific research, and to solve the problem—what is ozone? In reference to the amount of this element, and the density at which it may be produced, very few experiments have as yet been made. But enough is seen in the extraordinary reddening effect of the flame of the spark on litmus paper, to show that we are likely very soon to solve the ozone problem.—*Mechanics' Magazine.*

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, July 17, 1869.

Financial.

The monetary pressure which has obtained in our local market for the past three months may be said to have nearly passed away. Money is obtainable in bank at 1@1½ per cent. per month. The payment of the half-yearly dividends by the Savings and Loan institutions, amounting to over $800,000, has made money easy among the depositing classes; while the securement of several millions in England, at British rates, say 4 per cent. per annum—here worth 10@12 per cent.—will afford the requisite facilities to move the incoming heavy crops. In all other respects the financial horizon has been measurably freed from the clouds lately hovering above it, and preventing clear observations for future guidance. The healthy monetary condition of the interior may be considered a reflex of the improved condition which has taken place in the metropolis. The Sacramento Savings Bank recently declared a dividend of one per cent. per month, amounting to about $75,000, for the six months ended July 1st; but the depositors, with one accord, declined drawing their dividends, leaving them to be added to the principal; in addition to which, fresh deposits amounting to about $10,500 were made on the same day. This one incident sufficiently demonstrates the favor with which Savings and Loan Societies are received in California, and indicates an early and marked extension of their beneficial effects to other towns and places in the State, where their presence is needed.

Government now has, locked up in the vaults of the Assistant Treasurer, in San Francisco, the handsome little sum of $13,000,000; and we desire to call attention to a gross piece of neglect toward its employés on this coast. This is the third month since the Custom House officials have received any pay. The majority of them are by no means in a condition to wait for so long a period. Their salaries, at best, are not adequate to the amount or importance of the work performed. There is no better regulated institution of the kind in the Union; none in which more system and order are observed; and it is wrong, inexcusable, that the employés should be compelled to part with their pay accounts at a loss of from 5 to 10 per cent., in order to subsist. Most of them are gallant and meritorious officers of the late Volunteer Army, and have demonstrated their devotion to country on many a sanguinary field. They deserve and should have more efficient recognition. Were the Treasury hare of money, the case would be different; but with $13,000,000 idle in this city, the neglect appears inexcusable. We trust that Mr. Bontwell will give the matter early and efficient attention.

The Branch Mint closed on the 10th inst., to make a settlement, and will reopen shortly under the new direction.

Bullion is in rather short supply, with a more active demand than at the date of our last issue. Gold bars are quotable at 870@875. Silver bars are at par. Currency bills on Atlantic cities pay 34⅛@34¾ per cent. premium on gold. Coin drafts pay 1¼@1½ per cent. premium. Telegraphic transfers, 1⅛@1¾ per cent. premium. Sterling exchange, 48¾d. Commercial exchange, 49¼d. There are no Mexican dollars in market. Gold in New York, July 15th, 136¾; Legal Tenders with us, 74⅛@ 73¾.

City Stocks.

We have to report a continued dullness in the miscellaneous share market. Sales of Spring Valley Water stock were made at $64@64 75, and San Francisco Gas at $80 per share....The California Steam Nav. Co. disbursed their usual dividend of 1 per cent. per month on the 15th inst....The California Insurance Co. disburse a dividend of 2 per cent. per month for the quarter ending June 30th....The Union Insurance Co. pay 1 per cent. per month for the three months just closed. Their total assets are stated to be $1,012,766, and the net surplus, after allowing for re-insurance and other claims, $141,961.... The Fireman's Fund Insurance Co. paid a dividend of 1 per cent. per month on the 16th inst. for the quarter ending June 30th; and the Home Mutual Insurance Co. will pay a dividend of 1 per cent. on their capital stock on the 20th inst....The Bank of California announce their usual dividend of 1 per cent. for the present month. The Farmers' and Mechanics' Bank of Savings disburse a dividend of 10 per cent. per annum, free of Federal tax, for the first six months of the current year....On the 15th inst. the Omnibus Railroad Co. paid its usual monthly ½ per cent. dividend ...The State Telegraph Co. paid a dividend of $1 per share on the 15th.....The French Savings Bank has declared a dividend of 11 per cent. per annum for the six months just closed, payable on and after the 19th inst.

Mining Share Market.

The mining share market has been somewhat less active during the past week, but the number of stocks dealt in proved equally as large as heretofore. In a number of instances prices have been well maintained, while others show a slight recession, and altogether the market may be considered less firm as compared with the transactions of the previous week. Very considerable sales of White Pine stocks have been effected in the open market, showing that increased interest is taken in this class of securities.

CHOLLAR-POTOSI—attracted increased attention at fair prices. From the annual report for the fiscal year ending May 31st, we learn that the company extracted 44,900 tons of ore, giving an average yield of $23 70 per ton, the cost of extraction, reduction, etc., being $21 09, leaving a net profit of $2 61 per ton. We condense the following statement of receipts and expenditures from the Secretary's report:

RECEIPTS.

Bullion	$1,152,303 37
Ores sold	29,989 33
Premium on bullion	2,849 22
Superintendent's account	3,074 37
Sundries	2,849 50
Cash on hand per last statement	110,148 35
	$1,301,210 14

EXPENDITURES

Dividend	$11,595 00
Labor	248,663 00
Hardware, etc	34,414 54
Timber and Lumber	36,036 06
Firewood	18,953 49
Reducing Ore	636,578 27
Taxes and Legal Expenses	9,148 00
Truckee Railroad	75,000 00
Freight	7,213 43
Assaying	3,047 12
Materials	6,193 87
Sundries	25,066 20
Cash on hand at date	108,991 35
	$1,301,210 14

During the week ending July 9th, 1,410 tons of ore were extracted, against 1,660 the previous week. Of the above amount 670 tons came from the Blue Wing stope, and 460 from the New Tunnel developments. The faces in the Blue Wing stopes are reported to look promising. No change in quality of New Tunnel ore; the average assays from car samples show $72 to the ton. The shares of this company have been changed from 2,800 to 28,000, and the incorporate value from $2,000 to $100 per share, making ten shares to the foot.

OVERMAN sold to a limited extent. From the annual report closing with June, we learn the following:

RECEIPTS.

Bullion	$358,863
Ore sold	5,059
Assessments	140,267
Wood ranch account	28,078
Sundries	4,446
Cash on hand July 1, 1868	52,184
	$590,470

DISBURSEMENTS.

Reducing ores	$290,936
Labor account	117,095
Wood ranch account	61,416
Lumber, etc	66,105
Salaries	8,321
Sundries	38,655
Cash on hand July 1, 1869	8,032
	$590,470

The average yield of 22,261 tons of ore reduced during the fiscal year was $16 12 per ton. The officers for the ensuing year are as follows: M. J. McDonald, President; David Fay, A. Homme, Louis Vessarla and W. R. Parkinson, Trustees; T. J. Owens, Secretary; Joseph A. Myrick, Superintendent.

SAVAGE—has been exceedingly active during the past week. The annual meeting was held on the 16th inst., and from the Secretary's annual report we condense as follows:

RECEIPTS.

Bullion product	$1,949,925
Premium on same	4,875
Ores sold	15,919
Tailings, etc	6,323
Cash on hand July 1, 1868	106,329
	$2,083,362

DISBURSEMENTS.

Dividends	$751,575
Reduction of ores—custom mills	145,936
Reduction of ores—company's mills	145,447
Labor	284,769
Salaries of officers	20,022
Virginia and Truckee Railroad	75,000
Timber and Lumber	50,549
Fuel, Wood and Coal	53,636
Hardware, Candles, etc	26,025
Assaying	10,939
Taxes	19,529
Sundries	45,749
Cash on hand July 1, 1869	47,395
	$2,083,362

$150,000 was subscribed towards the completion of the Virginia and Truckee Railroad. The amount of ore on hand at the mine July 1, 1868, was 1,683, and on July 1, 1869, 121 tons. The ore reduced during the year amounted to 56,479 tons. The amount of ore sold was 15,363 tons. The cost of production and reduction, yield and profit of the ore reduced during the past year compares as follows with the two preceding years:

	Production.	Reduction	Total.	Yield.	Profit.
1866-7	$7 91	$14 04	$21 95	$41 84	$19 89
1867-8	7 21	13 74	20 95	40 84	19 89
1868-9	8 90	12 22	21 12	34 87	13 75

The amount of ore reduced in 1866-7 was 69,377 tons; in 1867-8, 84,627 tons, and in 1868-9, 55,479 tons. The receipts and disbursements for the past three fiscal years compare as follows:

	Receipts.	Disbursements.	Cash on hand.
1866-7	$2,935,875	$2,898,183	$77,716
1867-8	3,560,834	3,502,230	106,320
1868-9	1,977,042	2,035,967	47,395

The monthly dividends disbursed by the company for the same years were as follows: In 1866-7, $880,000; 1867-8, $1,660,000; 1868-9, $968,000. From date of organization the amount of ore taken from the mine has been 339,808 tons; reduced, 324,317 tons; gross receipts in bullion and from ore sold, $13,304,740; assessments levied, $188,000; and dividends disbursed, $4,528,000. The available assets of the company at the close of the fiscal year were $90,803, against liabilities of $2,655. The property assets of the company aggregate $256,000, as follows: Savage and Atchison mills, $90,000; E street shaft and works, $150,000; buildings at Virginia, and assay office, $16,000.

HALE & NORCROSS—was moderately dealt in. For the week ending July 10th, 154 tons of ore were extracted from the upper mine, and 578¼ from the lower mine, making a total of 732¼ tons for the week, against 1,321 tons the previous week. They delivered 644 tons to custom mills; on hand, 2,011½....IMPERIAL levied an assessment of $5 per share on the 14th inst; office removed to No. 20, Hayward's Building....A dispatch to the *Daily Herald* states that it is likely that YELLOW JACKET will levy an assessment of $10 per share after the annual meeting, which takes place on the 19th inst....GOULD & CURRY is quiet. During the week ending July 12th, 248 tons of ore were extracted, average assays from car samples showing $51 40 to the ton....On the 12th inst. the OPHIR was in a distance of 428 feet....KENTUCK yield of bullion for the quarter just closed amounted to $42,684. ....EMPIRE yield of bullion—April, May and June—$46,225....SIERRA NEVADA reports a bullion yield for the quarter just closed of $55,139. The stock has been changed from $500 to $200 per share, and the number of shares from 3,000 to 15,000, making five shares per foot.

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Newlz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alpha Cons, Storey co., Nev., June 5, $5	July 10	July 31
Blue Rose, White Pine, May 31, 5c	July 10	August 1
Bullion, Storey co., Nev., June 25, $10	Payable immediately	
Brodt, White Pine, June 23, 25c	July 29	Sept. 4
Central, Storey co, Nev., June 23, $2.50	July 24	Aug 14
Cosala, Mexico, June 19, $1.25	July 24	Aug. 12
Comanila, White Pine, July 13, 20c	Aug. 13	Aug. 26
Coso Chloride Flat, W. P., May 28, $1	July 7	July 29
Cherokee Flat, Butte co., June 28, $5	Aug. 3	Aug. 18
Chester, White Pine, June 29, 15c	Aug. 4	Aug. 25
Cuba Cons., White Pine, June 24, 6c	July 24	Aug. 10
Cayuga Chief, White Pine, June 23, 10c	July 30	Aug. 23
Dancy, Lyon co., Nev., May 29, $1.50	July 1	July 19
Daniel Webster, White Pine, June 30, 15c	July 30	Aug. 19*
Evening Star, White Pine, June 25, 10c	July 31	Aug. 21*
Gold Hill Q., Storey co., June 29, $1	Aug. 2	Aug. 23
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 26*
Hidden Treasure, White Pine, June 29, 50c	Aug. 4	Aug. 25
Hope Gravel, Nevada co., June 29, $1	Aug. 1	Aug. 23
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 24
IXL, Alpine co., May 10, $1 50	June 28	July 28*
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Julia, Storey co., Nev., May 27, 50	June 29	July 17
Kentuck, Storey co., Nev., June 14, $10	July 15	Aug 3
Manzo, White Pine, June 30, 10c	Aug. 5	Sept. 11
Magenta, White Pine, June 23, 10c	July 29	Sept. 4
Mahogany, White Pine, June 17, 10c	July 23	Aug. 13
Mammoth Cave, White Pine, July 12, 10c	Aug. 19	Sept. 23
Noonday, White Pine, June 14, 30c	July 19	Aug. 9
New Star, Nevada co., June 4, $20	July 3	July 30*
North Star, White Pine, May 12, 75c	June 18	July 17
Pioche, White Pine, April 6, 15c	June 30	July 30
Phœnix, White Pine, July 12, 15c	Aug. 12	Sept 30
Rathbun, White Pine, June 22, $1	July 27	Aug. 14
Silver Moon, White Pine, May 31, 5c	July 10	August 1
Silver Wave, White Pine, June 7, 20c	July 8	July 28*
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug 28
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Aug. 26*
Virginia, White Pine, June 17, $1.25	July 26	Aug. 11
White Pine Water, June 23, $50	July 28	Aug. 16
Willimantic, White Pine, May 20, 20c	July 10	Aug. 10*
West California, White Pine, July 10, 10c	Aug. 17	Sept. 25
Wells, White Pine, June 4	Sale July 23	
Yosemite, Humboldt co., Nev., July 2, 50c	Aug. 7	Aug. 21*

MEETINGS TO BE HELD.

Allegheny, Sierra co.....Annual Meeting July 26
Bromide Tunnel, White Pine.....Annual Meeting July 26
Chieftain, White Pine.....Annual Meeting July 22
Chester, White Pine.....Annual Meeting July 30
George Washington, White Pine...Annual Meeting July 28*
Mineral, White Pine.....Annual Meeting July 19
North Virginia.....Annual Meeting July 19
Pogonip Flat, White Pine.....Annual Meeting July 19
Rhipon, Alpine co.....Meeting July 19
San Fernando Tunnel, White Pine..Annual Meeting Aug. 2*
Sentiny, White Pine.....Annual Meeting Aug. 2*
Thunderbolt, White Pine.....Annua Meeting July 23*
White Cloud, White Pine.....Annual Meeting Aug. 2*
Yellow Jacket, Storey co., Nev.....Annual Meeting July 19

LAST DIVIDEND.

Amador Co., div. $3 per share.....Payable July 3, 1869
Alpha Cons., Storey co., Nev., div. $2.....Pay. June 19, 1868
Bacon, Storey co., Nev., dividend $1.....Payable June 15, 1869
Coney, preferred Stock, div. 1½ per cent.....May 10, 1869
Crown Point, dividend, $7.50.....Payable Sept. 12, 1868
Chollar Potosi, div., $20.....Payable July 7, 1869
Eureka, div. $5.....Payable July 10, 1869
Empire M. & M., Nev., dividend $6.....Payable May 15, 1867
Gould & Curry, div., $7.50.....Payable May 15, 1867
Gold Hill Q. M. & M.—dividend, $7 50....Payable July 13, 1868
Golden Chariot, Idaho, div. $3.....Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c ₱ sh...Pay. June 26, 1868
Hale & Norcross, div. $5.....Payable July 10, 1869
Imperial, Storey co., Nev., div.....Payable June 20, 1868
Industry, White Pine, div., $4.....Payable July 1, 1869
Keystone, Sierra co., div., $32.....Payable May 6, 1869
Kentuck, div., $20 per share.....Payable Jan. 10, 1869
North Star, dividend, $5.....Payable Aug. 15, 1868
Occidental, div. $2.....Payable March 2, 1869
Pacific Unassessable, div.....Payable June 18, 1868
Sand Springs, dividend $1.....Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50...Payable Dec 19, 1868
Savage, Virginia, Nev. dividend, $4...Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1...Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. $2.50...Pay. July 10, 1869
Virginia & G. H. Water Co., Dividend, payable April 16, 1869
Yellow Jacket, div., $5.....Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, July 16, 1869

MINING STOCKS—WASHOE DISTRICT.		
Alpha	26	26
Baltimore American	—	—
Belcher	23	25
Bullion, G. H.	15	16
Crown Point	51	52
Cole (Va.)	—	8
Confidence	40	—
Consolidated Virginia	—	10
Chollar-Potosi	26¼	27
Dancy	2½	3
Exchequer	11	12
Empire Mill and Mining Co	69	70
Gould & Curry	111	112
Gold Hill Quartz	58	59
Hale & Norcross	137	138
Imperial	68	70
Julia	1¼	2
Justice and Independent	8	8½
Kentuck	161	165
Lady Bryan	45	49
American	16¾	17
Occidental	18	20
Ophir	21	23¼
Overman	80	81
Segregated Belcher	9	10½
Savage	88½	90
Sierra Nevada	8¾	9
Union	—	—
United States	—	—
Yellow Jacket	53	53½
MISCELLANEOUS MINING STOCKS.		
Amador (California)	285	290
Aurora, White Pine	10	19
Eureka, (California)	—	225
Golden Chariot (Idaho)	35	40
Silver Cord (Idaho)	6	—
Golden Rule, California	10	—
Mohawk (California)	—	—
Pocotillo, White Pine	3¾	5

SAN FRANCISCO MARKET RATES.

Wholesale Prices.

FRIDAY, July 16, 1869.

Flour, Extra, ₱ bbl	$4 75	@	$5 50
Do. Superfine	—	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 40	@	1 70
Oats, ₱ 100 lbs	1 50	@	1 75
Barley, ₱ 100 lbs	1 15	@	1 30
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	—	@	1 15
Hay, ₱ ton	10 00	@	17 00
Live Oak Wood, ₱ cord	9 00	@	10 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

CROCERIES, ETC.			
Sugar, crushed, ₱ lb	14¾	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	26
Do. Rio	—	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	50	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5¾	@	6¼
Coal Oil, ₱ gallon	45	@	47½
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	35	@	38
Isthmus Butter, ₱ lb	30	@	35
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	35	@	42½
Lard, ₱ lb	13	@	17
Ham and Bacon, ₱ lb	14	@	16
Shoulders, ₱ lb	7	@	8

Retail Prices.

Butter, California, fresh, ₱ lb	45	@	60
do. pickled, ₱ lb	30	@	—
do. Oregon, ₱ lb	20	@	25
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	50	@	55
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Oysters, ₱ lb	75	@	1 00
Potatoes, Sweet, ₱ lb	1½	@	2
do.	—	@	—
Tomatoes, ₱ lb	5	@	10
Onions, ₱ lb	5	@	8
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	7
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	18
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and G. O	7	@	12
Soap, Castile, ₱ lb	18	@	20

Company Transactions.

New Incorporations.

TIDE LAND RECLAMATION CO.—July 9th. President, A. C. Peachy; Vice President, Lloyd Tevis; Treasurer, George D. Roberts; Engineer, E. B. Dorsey; Secretary, Wm. Doolan. Directors: A. C. Peachy, Lloyd Tevis, Geo. D. Roberts, Lafayette Maynard, E. B. Dorsey, S. Heydenfelt and John S. Hager.

MINERAL CITY G. & S. M. CO.—Nev. July 9th. Capital stock, $1,000,000. Trustees: G. W. Lamb, J. N. Hicks, A. M. Crow, S. Brannan and W. V. Wells.

ROSEDALE S. M. CO.—July 10th. Capital stock, $2,400,000, divided into 24,000 shares. Trustees: Wm. R. Maurice, T. C. Owens, Miles Jewett, Daniel McLeod, Jr., C. C. Palmer and C. H. Kingsley.

CALENTA S. M. CO.—White Pine. July 13th. Capital stock, $1,200,000, divided into 12,000 shares. W. Ayers, F. P. Sweet, J. D. Rogers and J. G. Hoitt.

RAILROAD M. CO.—July 13th. Capital stock, $4,000,000, divided into 40,000 shares. Trustees: T. G. McLean, D. O. McCarthy, James Kellogg, J. H. Cooper and J. T. Clough.

IMPROVED STEAMBOAT WHEEL CO.—July 14th. Trustees: N. Heath (President), W. L. Palmer (Vice President), J. G. North, L. L. Sawyer, J. A. Eaton (Treasurer), J. Armstrong, Jr. (Secretary).

SIERRA NEVADA M. CO.—July 14th. Increase of capital stock from $1,500,000 to $3,000,000, divided into 15,000 shares.

LA PLATA S. M. CO.—Winnemucca, Humboldt County, Nev. Capital stock, $4,000,000, divided into 40,000 shares. Trustees: J. H. Cooper, T. G. McLeau, J. P. Clough, D. O. McCarthy and James Kellogg.

PACIFIC EXPRESS CO.—July 14th. Capital stock, $8,000,000, divided into 80,000 shares. Trustees: H. D. Bacon, D. O. Mills, Lloyd Tevis, Josiah Stanford and Louis Cummings.

Meetings, Elections, Etc.

FAIRMOUNT LAND ASSO'N.—July 12th. Trustees: Charles F. Brown, John Kurtz, John W. Shaeffer, Wallace Everson, William J. Gunn, William Stuart and Joseph Brandenstein.

SCHOOL HOUSE EXTENSION LAND ASSO'N. July 12th. Trustees: W. J. Gunn, C. F. Brown, D. S. Bachman, John Kurtz, John W. Shaeffer, Joseph Naphtaly and B. L. Brandt.

KEWANEE S. M. CO.—White Pine. July 12th. Trustees: George E. Whiting, Theodore A. Mudge, Henry Laidner, Henry Moore and Henry B. Murray.

CASTLE TRACT H. A.—July 13th. Trustees: A. S. Gould (President), George Fitch (Vice President), D. Steffens, M. J. Hopkins, Thomas Kerr and Peter T. Seculovich, John R. Wilde, Secretary and Treasurer.

SAVAGE M. CO.—July 14th. Trustees: S. W. Glazier, J. D. Fry, Thomas Bell, A. Hayward and Alpheus Bull. President, Alpheus Bull; Secretary, E. B. Holmes; Treasurer, W. C. Ralston; Superintendent, T. B. Shamp.

PACIFIC INSURANCE CO.—July 14th; President, J. Hunt; Vice President, William Alvord; Secretary, A. J. Ralston; Marine Secretary, A. Baird.

If the type of your evening paper begins to look small, dim or indistinct, apply at once to C. Muller, 205 Montgomery street, for a pair of his A No. 1 Spectacles. *

To News Agents.

From July 1st, 1869, News Agents desiring five or more copies weekly of the MINING AND SCIENTIFIC PRESS, will be furnished direct from the office, at a reduced price from former rates. Orders for a less number can best be supplied through San Francisco wholesale agents.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

The *Miner* condenses a letter from a man who has traveled extensively in South America and Mexico, and who recently inspected the Tarshish mine and others in Alpine. He prophesies that all the small locations will he sooner or later abandoned or sold, but the regular organizations, with capital will succeed, and this section will within five years produce as much silver as the State of Nevada in its best days.

Pennsylvania.—It worked about $7 per ton. Such is the reluctant answer we have finally obtained to the question, what was the hullion result from the ton of Pennsylvania ore recently sent to Washoe.

Splendid indications in the Globe tunnel this week.

AMADOR COUNTY.

The *Alta's* mining summary for the half year, says: The returns of the Amador mine for June have not yet been received, but the average gross yield had been about $63,000 per month from Febraary to May, iuclusive. At the present rate of production the mine will turn out nearly, if not quite, $750,000 for 1869. The production for the first five months of this year was $47,861.53, $65,670.98, $61,720.65, $66,-346.52, and $61,576.70. The number of tons reduced averages about 2,950 per month, every ton yielding more than $20. The dividend for each of the last five months was $10 per share.

CALAVERAS COUNTY.

Petticoat.—*Chronicle*, July 10th: Rich rock has again been struck iu the Petticoat and the mill will soou he running. The shaft is sunk to the depth of 200 ft.

Rich Rock.—Fifty tons of rock, taken from a lead owned by Mr. Hopper, at Railroad Flat, crushed iu Smart's mill, yielded 93 ozs.

INYO COUNTY.

Letter from Independence, June 21st: The Kearsarge Co. are working 10 men, taking good ore, but will not start their mill for some time. Mr. Passmore is now running the Silver Sprout mine. He is taking out good roek and will start the mill about the 6th of July.

In Cerro Gordo District they arc going ahead at an astonishing rate. One mine, the Ignacio, was sold to-day for $24,000. Belshaw & Co. are smelting ont from three to five tons of crude hulliou per week. Sympson & Co. are getting three tons of ore per day to the drifter, and will inerease the number of drifters to 30. They sell their ore to Belshaw & Co. for from $6 to $15 a ton.

Cerro Gordo.—From the Los Angeles *Star*, July 10th: Wm. Eakin and Jesse Avers arrived last Saturday from Cerro Gordo, the former bringing 96 bars of metal, weighing three tons. This metal is rieher than any heretofore brought to our city. New mines are being located every day, Four new furnaces are nearly completed, while there is ore enough, easy of attraction, to give employment to 100.

MARIPOSA COUNTY.

Hunter's Valley.—*Mail*, July 9th: Parties working the Oakes & Reese mine, at Hunter's Valley, are about making extensive improvements. Twelve new stamps, and a new engine at the hoisting department, are heing eonstrncted—making it a 28-stamp mill. From 80 to 100 men are employed. Work has beeu recommenced on the Floyd veiu. The use of the Giant powder, coupled with the eoutract system with the miners, makes a wonderful percentage in favor of all parties interested.

Running.—The Mariposa Co's new 25-stamp mill, on the Merced river, is now running—making 61 stamps now in operatiou for the eompany. These mills are crushing rock from the Josephine and Pine Tree veins, and are operating with the dry crnshing proeess. The eompany has also commenced work at the Mariposa mill, running 25 stamps.

NEVADA COUNTY.

Allison Ranch.—Grass Valley *National*, July 6th: Work at this mine is diligeutly proseeuted. The large pumpiug engine is to be removed from the south to the middle shaft. Excavations for the fonndatiou have beeu made, and workmeu commenced laying the stoue to-day. The new pole, sixteen inch, Cornish puup, will he put in at the boh level. Below this will he the fourteen iuch pump at present iu use. Each of these puups has a vertical lift of 160 feet. Some exeellent rock is being taken out from that portion of the miue known as the Cariboo ledge; fully up to the old standard of the Allison Ranch ore. None has yet heen crushed.

Union Hill.—We chronieled last week the cleaning up of $4,000 from the plates, and yesterday gold to the amount of $10,000 in addition was brought in.

Greenhorn.—The lessees have been working three months, and had three clean-ups, the poorest of which yielded at the rate of $16 per ton, exclusive of sulphurets. They are down 70 feet on the line of the ledge. Rock is heing crushed at Laton's mill at Union Hill, which is paying $20 per ton. There is very little water in the mine. For the present, all the hoisting is done with a windlass, by hand. Two men have taken out 45 tons during the last month. The ledge is now from five to seven feet in thickness. It is in contemplation to ereet steam hoisting works and put up a ten stamp mill.

Dromedary.—Same of 7th: Parties working the main ledge of the Dromedary mine on shares, had a crushing yesterday of seven tons of rock from the hundred-foot level, at the Gold Hill mill, which paid $182. The same of 9th says that nine tons from the 300 foot level had just yielded $440—$49 per ton. Better rock still, is in sight.

Mutual.—9th: This miue is four and a half miles east of Granitevillc. An incline shaft, 125 feet in depth has just been completed to the tunuel. The shaft is 14 feet in diameter in the clear and strongly timbered. They will start their mill within ten days. The ledge is well defined, three feet in thickness, and shows well in gold and sulphurets.

Brown's Hill.—Williams & Co. have worked most of the time this season. Their average elean-up for a two weeks' run is $1,509. Browu Bros. have completed a drain tunnel and will start their eement mill next week. When the mill is running, they clean up from $2,000 to $3,000 per week. Neece & West have just completed a tunnel, and are now running powder-drifts. They will use 200 kegs at a hlast. The hlack powder is employed.

Empire.—Grass Valley *Union*, July 8th: The Empire mine is again going ahead with a full working force.

Same of 13th says: "Up to yesterday afternoon the Empire mill had run eight and a half days, and cleaned up over $19,000, When the night shift were to go on, only five pairs of men presented themselves. The assassinations of Saturday night had intimidated the others so that they would not work. The slungshot and the bludgeon rule in this vicinity, and the rule seems to be suhmitted to with a spirit, at once meek and iuvitiug more violence. Sunday night another man coming from the Empire into town was attaeked by three men, and was eompelled to take refuge in a house by the roadside, where he remained until day-light. Havo we any men iu this eommunity who dare assert themselves as on the side of law? If any snch there are, let them speak, and that too so they will be heard."

Deer Creek.—*Transcript*, 9th: There are not less than fifteen Chinese eompanies at work, giving employment to between two and three hundred of their countrymen. There are besides, a eompany working Little Deer Creek and one in Gold Run. White men have worked these over and over, and then sold them, at good prices, to Chinese eompanies, who appear to he doiug well. We know of one instance where they paid $2,200 for a creek elaim considered almost worthless, and they are now putting in expensive works to open it up in a proper mauner.

Magnolia.—10th: The proprietors are running a tunnel from Mosquito Creek, which will strike the lead about forty feet lower, giving them backs of eighty feet. They have out about twenty tons at the shaft, which looks well.

Oriental.—The Oriental Mill is running upon a lot of roek from the ledge of Beasley & Co., up Deer Creek. The roek looks well.

Above the Cascades.—11th: Several eompanies are prospectiug ou Upper Deer Creek. One man contraets to rnn a 200 foot tuunel, and thoroughly prospect the ground, for one-half the claim.

Eureka.—The *Alta's* semi-annual Miniug Review says: The Eureka Mine produced in Jnne more than $47,000, of which, however, $4,500 were from sulphurets eollected in previous months. The total yield of the first half of the year was $285,109 14, from 9,000 tons of quartz, making an average of about $32 per ton. The expenses were $102,000, leaving $183,000, or more than $1,000 per day net, and $20 per ton net. The number of men employed is about one hundred and fifty.

PLACER COUNTY.

Murderer's Bar.—San Mateo *Gazette*, July 3d: The company now engaged with machinery on the upper end of Murderer's Bar, is Page, Down & Co. We learu that they expect to get their claim ready to work hy next Monday. The warm weather has kept the river high, but the snow on the mountains was getting scarce and the water was falling rapidly. Murderer's Bar is below the hridge on the west side of the river, and is supposed to be the old hed of the stream. The company spent last summer in experimenting with different kiuds of pumps aud machinery in trying to keep their shaft clear of water, and hy the time they had succeeded iu perfecting their work, the rainy season commenced and the company suspended work, secured their machinery and waited. They expect to take out gold by the pound.

PLUMAS COUNTY.

Argentina.—Qnincy *National*, July 3d: We firmly believe that the richest mine in the State of California is situated at Argentina, in this county, ahout ten miles from this place. Heath & Co. are now sluicing to the depth of forty feet, and it is paying them from an ounce to $20 per day to the hand. The gold-bearing earth consists of a vein about 300 feet wide, with neither length nor depth as yet determined. The rock is soft and varies in color from a dark brown to yellowish. The gold is found disseminated all through it in fine particles, though the richest places are found in the rusty seams. They break it up and run it through ground sluices and boxes for nearly half a mile.

A correspondent of the Santa Fé *Herald*, W. P. Early, speaks of the same mine, July 1st, as follows: "Messrs. Heath & Frecman discovered that their predecessors threw away the rock that contained the trcasnre, and worked the white quartz only, which is comparatively harren. The mine is 300 feet in width and over 1,000 ft. in length, and is kuown to he a continuous hody of rich mineral. The priucipal gold-hearing rock is talcose slate, the eolor heing a deep yellow. The talcose and quartz veins that course through it in every direction, are completely spotted with sulphnrets rich in gold."

SHASTA COUNTY.

Upper Sacramento Items.—Correspondeuce of the *Courier*, July 10th: Alexander McMullen & Co. are digging a race across a har on the Sacramento, three miles above Portuguese Flat, in order to mine the bed of the river in which they have found very rich prospects. The river has beeu wing-dammed in a numher of places, and gcnerally paid well. Frank Moore & Thomas Neal are engaged in a wing-dam enterprise just below the mouth of Slate Creek.

Hazel Creek is paying hetter than for ycars. McKenzie & Garrett, Johnson & Co., Keaton Brothers, aud others are making from $3 to $5 per day to the hand. The gravel on this creek is of a burnt reddish hue, and eontains any amount of porous quartz, some of which is very rich in free gold.

SIERRA COUNTY.

Giant Powder.—*Messenger*, July 10th: Giant powder and single-hand drills have heen in use at the Reis mine now for some time, and the verdict is that they save from thirty to thirty-five per eent. in the getting out of rock. It is also heing used at the Independence and Gold Bluff mines, and the Keyestone will put it into their tnnnel as soon as they can get men who thoroughly understand its use to introduee and instruct the workmen.

Arizona.

Montgomery.—*Miner*, June 28th: C. B. Genung has crushed, in his arastra, 2,500 lbs. of Montgomery ore, and A. J. Shanks says he saw $90 taken from the arastra. The arastra was a new oue, and it was thought that as much more worked its way down into the interstiees. The lode has widened, and is now four feet thiek.

Sterling. — The Sterling folks are trouhled with bad air. Work on the mill is progressing favorably.

Lynx Creek.—Ed. Bowers informs us that many miners were at work with rockers when he left, most of them making fair wages.

Upper Hassayampa.—It was reported in town yesterday, that a miner has taken out $300 in one week.

Early the present week, word was brought to town that a rich guleh had been struck in the vieinity of the Placeritas, near Walnut Grove, and that there were 24 Mexicans working in the gulch, roeking and panning. The latest news is that the Mexicans were making from $6 to $30 per day. ....We have heen told that a miner prospecting near Prescott, struck a gulch out of which he took $9.50 in a few hours.... There are on the Lower Hassayampa, between the two cañons, bars that prospect exceedingly well, still nohody takes hold of them. Geo. Moore says five cents to the pan has heen found in these bars. Plenty of watcr can he had there at all times.

Colorado.

Colorado against the World.—*Register*, June 24th: The Gilpin County and Coaley lodes, Silver Gulch, Black Hawk, are not only excelling everything in the silver line hitherto found in Colorado, but anything yet produced in the United States. The ores excel those of the famous Poorman lode of Idaho. For 100 ft. along the tunnel, the vein of rich ore appears. It is largely galena and zinc with masses of native silver, or metallic silver with not more than ten per cent. of other matter. We have samples of it in our cabinet, and there are pieces of ore of the same character which Goodspeed offers to any one who will lift them, lying at the mine.

Items.—Linden Castle lode has been opened to a depth of 85 ft. From the surface down it presented galena which assayed 48 ozs. of silver per ton. For 10 or 15 ft. down the vein is well defined. From the hottom we took ores for assay which gave us 107.4 ozs. of silver worth $139.62 in coin, and no gold. At the top, the ores as reported, assayed from 48 to 50 ozs.... Messrs. Woodhury & Co., have been erecting at their mill a water wheel 23 ft. in diameter and four ft. breast.

Chicago Creek.—A hole 12 ft. deep on the Kremlin, produced three tons of snlphuret ore, selected samples of which assayed upwards of $1,700 per ton, and a quantity taken for an average, $368 per ton.

The Plymouth Rock is another promising lode. They have opened only about 10 ft. deep, hut it shows rich sulphide ore. Clark, Sisty & Co., are opening a new discovery that looks well. The vein is a very large one, and the croppings assay over $100 per ton.

Warn District.—June 25th: Edward Learned, President of the Ni-Wot Co., contemplates organizing a smelting company for working the ores of Boulder County, with a capital of $200,000. The Edgehill mill is now making good runs. Only one idle mill in the district, and we hope to have that in motion soon. On the Stoughton, Mr. Thompsou is again at work. The mine is in rich pay. Geo. Worth & Co. are working their East Columbia mine, disclosing a wide crevice of rich smelting ore. "Patch Diggings" have been discovered and claimed up on the slide of the Nelson lode. Gulch mining is carried on to Rhoad's Gulch. Down the creek (left hand) Erick Bottelson's 10-stamp mill is doing a good husinccss. He is crushing from tho Horsefall, ou Gold Hill, six ozs. of gold per cord. One mile below, Capt. Hall is putting in a first-elass arastra, and further down, Strock has an arastra running.

At Jamestown the hig mill of the Boston Co. is about ready for the maehinery. Eight or ten arastras are constantly at work, ohtaining $75 to $100 per eord. Wilson's arastra is getting $100 per eord from Star of the West lode. First-class ore in the Hoosier, hut no improvement in the management. Parties are sluieing in "Doe's Guleh."

Georgetown.—The Baker Co. are pushing work on their new furnaee, and preparing to put a large force of miners into their mine, which has improved greatly, both in quantity and quality of ore. On Saturday last the Brown Co. shipped 350 ozs.; and Mr. Stewart, 125 ozs. of silver.

The Marshall tunnel will cut all the main veins on Leavenworth and Burrill mountains. It is now in about 230 ft. Crow & Clark will he ready to hegin drilling again in a few days. Mr. Snyder is erecting a frame house near the Snowdrift lode, for the aeeommodation of his hands. He is working eight. Cooper & Fisher are preparing to resume work on the Astor. Chamberlaiu & Black have snnk a shaft on the Chamberlain lode 80 ft., and are runuing a eross-cut to strike the veiu at a depth of 150 ft. The lode proves extensive and rich.

Daily.—The prospecting season is fairly open. Daily Distriet is the center of attraction. The people elaim that the ore can he treated hy raw amalgamation. If this is a fact, Daily District will outstrip any other in Colorado.

Items.—On South Clear Creek mining has eeased for the time, owing to high water....C. L. Bradley has started his new mill in Russell Gnlch....Cheney has made a very fine run from ores of the Bobtail Co's miue; 28 ozs. per cord....Creighton lode ores, yield an average of eight ozs. of

gold bullion to the cord, the cost of crushing and mining being $2¼. This yields a net profit of about $121 per cord.

Idaho.

Potosi *Avalanche*, July 10th.—C. S. Peck & Co., have resumed work on this mine. The shaft is down 110 feet and the lodge looking well.

FLINT DISTRICT.—Warnkee, Swartz & Co. crushed two tons of ore from the Sherman, not specially selected, at Black's Mill, which yielded $538.

MINEAR MILL.—This mill is running on Hamilton rock....The rock of the Sherman ledge, Flint, has been tested within the last few days, and assays $260 per ton. The new hoisting works over the shaft of the Ida Elmore mine will be in running order by the 15th. The Ida Elmore and the Golden Chariot have connected their tunnels under ground, by which both mines are now well ventilated.

A new and very rich mine has been struck by Owen McMahon & Co. Free gold in sight. This mine is called the Dexter and is in French District, immediately south of the Peck & Porter.

The Red Jacket shaft is down 40 feet and indications favorable.

The water is being taken out of the Firelight, when a shaft will be sunk 100 feet

Tidal Wave, 6th: Black's Mill in Flint has started up on Leviathan ore this time. The ledge shows a width of nine feet, and two men are taking out ore as fast as two men can assort it....The Red Jacket has everything in good working order—shaft down 40 feet and nearly timbered—several tons of good milling ore on the surface in which free gold is visible.....Ida Elmore, never looked better since its discovery, a large lot of ore on the dump, and teams continually loading and hauling it to the mill. They are erecting a new engine house for the purpose of putting in heavier machinery for hoisting works..... The Golden Chariot mine is equal to its best days. The deeper they go the wider and richer.....The Baxter Company keeps on sinking in the main shaft with encouraging prospects. They are determined to put the shaft down another hundred feet, although they have plenty of good stoping ground above them.....The Silver Cord is showing as well as ever. Their shaft will be completed this month.....The Poorman has completed a shaft to the depth of 400 feet. Levels are already started and preparations made for running out an unusal quantity of rich ore. It is a rare circumstance that a blast is required, and the ore is as docile and easily handled as native gold in placers.....Prospecting is being pushed forward extensively on the mountain.

NORTHERN IDAHO.—Lewiston letter to *Wave* of July 9th: Everything is dried up about here. The Moose Creek mines are a failure. There have been a very few paying claims, but the ground is limited, and water scarce: The Chinamen are going there. There are more men in Florence than last year, but not as many in Warren's. In Oro Fino and Elk City reports give about the usual number of men. The placer mines will fall short of the usual yield, owing to the scarcity of water. There is some encouragement from the quartz mines in Florence and Warren's.

Montana.

A Helena correspondent of the Oroville *Record* of July 10th, says: Quartz mining is improving in all parts of the Territory, and when machinery can be got as easily as in California or Nevada, we will show as large shipments as either. The Whitlatch Union—named for the Quartz King of Montana—is paying from $30 to $40 per ton, and will continue for years fully as good. The Whitlatch Park Mining Co. is an extension of the same lode, and prospects better than the discovery. They will have a mill on it this fall, and no doubt will realize a fortune.

Nevada.

COPE DISTRICT.

From the Elko *Independent*, July 10th: There has been the usual fluctuations in Cope District stock that always attends the development of a new district. The first party that came in, gave glorious accounts. Then came the rush, followed by the return of the croakers. Time has now been given for the second, sober thought, and we can speak confidently. Tuesday, our townsman, O. R. Johnson, who is known to everybody as a man of cool, sound judgment, returned from a ten day's trip to Cope. He brought with him samples of the ore from the Argenta, Pioneer, California, Hamilton, and several other lodes, and we have not seen in our experience a finer lot of surface rock. The lodes he describes as being from four to ten feet in width, lying in granite, and giving every promise of permanency. We learn that Col. Frank Denver is now having three tons of ore from the Argenta worked at Dall's mill in Washoe,

Again, same date: A gentleman who left Cope District on the 3d inst., informs us that the excitement there continues unabated, in consequence of the daily discovery of new ledges. Twenty-one original locations are claimed to be separate and distinct ledges. Negotiations are now pending for the erection of reduction works on one of the mill sites. Cope District is destined to become a mining camp of considerable importance within a very brief period.

ITEMS.—Reports from Bull's Run of the most favorable character. The veins are from two to four ft. wide....A few days ago an immense quartz lodge, 20 ft. in width, was discovered 25 miles from town, and a few hundred yards from Mountain City road. The ledge escaped discovery by the prospectors, owing to the peculiar color of the croppings.

The *Alta* has an Elko telegram dated July 10th, saying: The Cope ore is similar to that of White Pine District. One ton crushed at the Washoe mills and worked by the dry process turned out over $600 to the ton.

ESMERALDA.

An Aurora correspondent of the Sacramento *Union* says, July 2d: A party passed through here this week who has located 20 claims in Deep Spring Valley, 25 miles northwest from Palmetto District. There are 50 miners at work, and this party, as agent for an English company in San Francisco to purchase a 20-stemp mill.

HUMBOLDT.

SHEBA MINE.—From the Elko *Independent*, July 7th; Seven or eight tons of ore were shipped from this mine to San Francisco a few days ago, which yielded, per assay, $475 per ton, and was taken at that valuation by shippers who intended sending it to Swansea for reduction.

An Eastern company has purchased the Register mine from Bonnifield & Coulter. The ore from this mine will be shipped to San Francisco.

Robert McBeth, of the Little Giant mine, in Battle Mountain District, has gone below to make arrangements for shipping a certain class of ore which cannot be worked satisfactorily at the company's mill. It yields on an average, $265 per ton, when there is twice that amount in the ore.

Large and well-defined copper mines are now being developed in this district, the ore paying from 40 to 60 per cent....The Yosemite mine, near Dun Glen, is yielding exceedingly rich ore, and in paying quantities....A great number of capitalists are now examining the Humboldt mines. Miners can sell their ore on the dump at good figures. The miners at Winnemucca continue to ship large quantities of ore.

REESE RIVER.

MINERAL HILL DISTRICT.—*Reveille*, July 10th: This is a new district organized at the locality whence came Mr. Northey's wagon load of ore, which worked at the Manhattan mill in this city, $550 per ton. Quite a number of our people have left for the district within the last three days, and more are going. It is between Cortes and Elko, 15 miles east of the mouth of Garden Valley.

HOT CREEK DISTRICT.—A letter to the Shermantown *Telegram* of the 9th, says: The New Philadelphia ledge has a 40-foot shaft and eight ft. of ore. The Wyoming has a shaft down 93 ft., and has produced 300 tons of ore. Of this, 100 tons gave a pulp assay of $123 to the ton; and a few assorted tons gave $417 per ton. The "Pure Metal" ledge is 100 ft. wide, and crops 50 ft. high for 600 ft. in length. I was shown several assays, that ranged from $110 to $3,000 per ton. The Gazelle, Silver Bright and Ingomar, are all undoubtedly rich. Present appearances indicate a bright future for old Hot Creek.

WASHOE.

[In the Stock Circular, in another portion of this paper will he found late mining news from this district.]

REOPENING THE MINES.—Gold Hill *News*, July 9th: The various drifts of the Crown Point, Kentuck and Yellow Jacket mines, are now being reopened; as the fire is supposed to be entirely extinguished. The 700-ft. level of the Yellow Jacket was reopened day before yesterday, and quite a strong gas has been coming from it ever since. It still has overpowering effects.

The old hoisting works over the north shaft of the Yellow Jacket have been completely overhauled, and the building repaired. They expect to commence hoisting water from the shaft by Monday next.

MINE STARTING UP.—The old Saucer mine in Gold Cañon, above Dovil's Gate, started up again yesterday. It has not been worked for a couple of years or more.

CROWN POINT.—It being considered likely that the fire in the upper levels of that and the Kentuck mine was at length smothered out, three of the closed levels next above the 1,000 were reöpened yesterday. The result is that the fire is found to be still burning, and an increase of gas and smoke is driven out through the Yellow Jacket. The drifts have to be closed again.

GOULD & CURRY is yielding about 50 tons per day from the upper levels. The heavy shaft of the pump engine, which was broken a day or two since, is not yet repaired or replaced, but will be, probably, by the first of next week.

WHITE PINE.

"Singlolue's" letter from Shermantown, in the *Enterprise* of the 11th, says: "White Pine never promised so well, or yielded so well, as to-day. There is not an idle stamp in the country—everything that will grind ore is in motion day and night, reducing rock which is not difficult to work and which is said to yield well. New stamps are being erected every day; and just as soon as a battery is ready to run the rock is on hand in abundance to feed it. From those stamps which are in motion, and have been in motion for from six months to six days, the bullion goes steadily away, to some country, in regular installments. I have seen, with my eyes, as much as a ton of nearly pure silver at one load going over the mountain from Shermantown to Hamilton."

WEEKLY REPORT.—*News*, July 10th: Owing to the festivities incident to a three days celebration of our national independence, but little progress has been made in the mines, and our bullion shipment for the week foots up but $61,299.19, being $10,719.27 less than last week. Aurora South, one of our leading mines, has been compelled to knock off 20 miners this week (having over forty left) on account of accumulation of ore without milling facilities. It is estimated that the present force will have between 1,500 and 2,000 tons of ore ready for the first run of Stanford's mill.

QUARTERLY REVIEW OF BULLION.—*Empire*, 11th: During the quarter ending June 30th, the following shipments of bullion were made from the Eberhadt mills, as shown by the assayer's books: From the Oasis mill, $167,096.62; from the Drake mill, $42,985.71; making a total of $210,082.33.

ITEMS.—*News:* Shaft on the Lexington 40 feet on the 9th....Paris mine has struck it in the south side of the incline....Metropolitan 1 and 2 improved as to ore, and ledge widens—will probably be a single ledge at greater depth.....Rich ore at 120 feet depth in the Genessee shaft of the Consolidated Chloride Flat Co.....Charles Mallet shaft 60 feet deep; work resumed.....Sinking commenced vertically in Eggleston & Brown on July 1st.....Rich chloride ore in the Pogonip and Othello struck July 1st.....Work re-commenced on the Jefferson on July 7th.....The west shaft of the Hidden Treasure South has come upon a singular deposit of rich ore. At the depth of 12 feet the shaft penetrated a cavity in the hard rock filled with a decomposed mass which is worth about $5 per pound. The opening is about four feet wide, so far as known, and runs off west northwest to an unknown distance..... First dividend of the Industry was $4 per share.....*Empire* says Capt. Holdridge has bought Rainbow No. 2 for $4,000 cash..... *Telegram* says the Chester mine has 20 tons of ore on the dump that will average $125.

WATER WORKS,—*Empire*, 9th: The 12-inch supply pipes are being laid at the rate of 1,000 ft. per day. The engines and pumps are in place and nearly ready to drive water through the summit tunnel. Two reservoirs are under contract.

BULLION HILL.—*Telegram*, July 3d: Bullion No. 10 has a shaft down 40 feet, and 70 tons of excellent milling ore on the dump.

THE SANTA CLARA is a very promising mine, situated in the Base Range. The principal owners are in San Francisco. The Company is incorporated. Their shaft is down 20 feet, and they have at least 25 tons of ore on their dump.

THE ELM is also a fine mine, and will in all probability ere long, prove to be one of the most valuable in the Base Range. The ore shows horn silver in larger quantities than the most sanguine anticipated. The company are busy running an open cut across the ledge, for the purpose of ascertaining its true wealth. The principal owners are here, and have any quantity of that which is most needful to develop a mine, muscle.

MOHAWK CANON—*News*: The Cassaday Ledge, a recent discovery, and location in Mohawk Cañon, is one of the most promising of the base metal mines. The vein is well defined, traceable 300 feet, and is from two to three feet in width. The ore, a beautiful specimen of which we have, contains some galena, but is rich in chloride, and assays from $95 to $238.77 in silver.

MURRAY LEDGE.—This is the name of a new discovery in Sawmill Cañon, western slope of White Pine Mountain, which carries the finest-looking quartz we have seen from the base metal region. The ledge is four feet wide, and the ore will doubtless yield handsomely by smelting.

MILLS.—*News*, 9th: Stanford's Mill machinery is arriving. Logan's Mill, at Swansea, will steam up on Monday. Says the *Empire* of the 11th: The Pocotillo Company is going to build a mill at the foot of the hill below the mine....Elko *Independent* of 10th says, the roads are strung with teams, loaded with machinery etc. for White Pine.

OUTSIDE DISTRICTS.—*News*, 6th: The Oro Fino holds its place on the Star ledge of Sacramento district.....The *Empire* of 11th says: Messrs. Yager and Goodwin from Reveille district, brought in 300 pounds of ore which assayed $2,950 per ton.....Some fine ledges have been struck in the mountains west of Duckwater, 35 miles south of Hamilton. Assays go as high as $900 per ton. Some excitement already.....*Telegram* of 6th says, everybody is busy in Patterson District. The little 2 stamp mill works up ore worth $200 per ton.....Over 100 men on their way to Mount Ophir District on July 2d, and 300 already there.

EBERHARDT.—"A reduction in wages from $5 to $4 has taken place in the Eberhardt mine, in consequence of which the miners struck, and work has stopped. At a meeting of the Miners' Union a committee was appointed to confer with the Superintendent of the Eberhardt. A special meeting of the Union will be held to take action on the report of the committee. It is understood that other leading mines will also reduce the wages."

New Mexico.

ARROYO HONDO.—Santa Fé *Gazette*, June 26th: The Mining and Ditch Co. have received the machinery for their 15-stamp quartz mill, and are putting it up.

ABIQUIU.—The gentlemen who visited Ahiquiu to look into the value of the mines, have returned. We understand they report good indications for gold, but that the water for washing it will have to be brought from the Chama—a distance of three or four miles.

It is understood that the Moreño ditch will be completed this week. The reports from these mines are flattering. More gold is offered for sale in Elizabethtown than there are greenbacks with which to purchase it.

A correspondent of the St. Louis *Democrat* writing from Elizabethtown, N. M., June 4th, says that L. B. Maxwell has sold his grant to some English speculators for $800,000, making some valuable reservations.

The Moreño *Lantern*, of Elizabethtown, says: The shipment of gold for three days this week amounts to $6,222.34....Calhoun & Co., in Grouse Gulch, cleaned up on Friday 21 ounces from four days' run..... Matthew Lynch sold his interest in Maxwell's mill and lode last week, for $50,000 cash, to Col. Bergmann and John Dold.... Pat. Connelly sold his interest in the Pacific lode last week, to a Mr. Hayden, from Cincinnati, for $5,000....Robert Floorman started up Bartholomew's 8-stamp mill in Humbug this morning, on ore from the North Star lode....Pollock's claim at the foot of Grouse Gulch gave 11 ounces and 18 pennyweights of gold, worth $262, the result of the labor of six men in one day and a half.

Oregon.

GOOD CLEAN UP.—Jacksonville *Sentinel*, July 3d: Messrs. Dillon & Bowden cleaned up last week, after crushing 70 tons of quartz. The result is not made public, but the proprietors are in good spirits, and say that they got more than a good working prospect. They will push work again vigorously.

Prof. John Veatch will make a geological survey of Bohemia District. The same gentleman, associated with J. Knott and Richard White, have agreed for an interest in the Excelsior lead, to make a thorough and scientific examination of that lead, and to report within a reasonable time.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

A. T. DEWEY. W. B. EWER.

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San Francisco:
Saturday Morning, July 17, 1869.

Notices to Correspondents.

Juniper, Santa Cruz.—Arhoriculture possesses other rcommendations to those purporting to become permanent residents of California, than mere personal profit. In a dry climate, the want of an adequate amount of trees is apt to occasion irregularity of temperature; violent storms, and aridity, while on the other hand, land overclothed with wood may produce the opposite effects, viz., a comparatively stagnated character of the atmosphere accompanied with, to human constitutions, an nnhealthy amount of moisture.

C. W. B., Oakland.—The mortality of poultry which is known to prevail in so mysterions a manner, has not, so far as we are informed, been referred to any special cause. An acquaintance who has paid more than a ten years' attention to the subject, conceives that amongst chickens, the mortality is chiefly attribuable to apoplexy; hut with ducks and geese, to an inflammation of the bowels, though how occasioned, he never could satisfy himself other than that it prohably arose in consequence of molting. The subject in an economic and scientific view, possesses great interest, and we would like to hear from any correspondent disposed to throw light on the subject.

S. M. R.—According to the cosmogony of Pythagoras, the infant world was represented as placed on the back of an elephant, itself being supported on the back of a tortoise. This, and the transmigration of souls, formed parts of Hindoo mythology. It is supposed that the mythical tortoise alluded to has been based on the fact that the remains of an enormous tortoise, *Colossochelys Atlas* have been discovered in India, which possessed a shell twelve feet long, eight feet in diameter, and six feet high.

Piscator, Marin County.—It is quite probable that both the sole and turbot, two of the most valuable fishes, would flourish from the Bay of Monterey to Fuca Straits, if the ova were transported here and *planted* on appropriate banks. Calculations have been made as to the moneyed worth of certain fishing stations, by which it has been estimated that the value of the *trawling* ground in the German ocean is equal to 25 cents per acre, and that of the Bay of Galway (Ireland), is worth more per acre than the land which environs it.

Mechanical Movements.—We have recently made arrangements hy which we shall be enahled shortly to place on sale on this coast, a large and splendid edition of a hook of over 500 Mechanical Movements, which we will sell at Eastern prices, in order to place it withiu easy reach of every inventor on the Pacific Coast.

Only four States of Mexico are now in a state of revolution.

Postal Telegraphing.

The *Herald* is making a gallant strike in favor of postal telegraphing—more definitely in favor of the passage of the Hubbard bill before Congress at the next session. In this it appears that the *Herald* has the sympathies of the entire communnity, and not alone of the Democratic party which sustains that newspaper on the telegraph question. To the Associated Press this is purely and rather keenly a matter of hnsiness. Bnt that association would do unwisely to oppose any ohstacle, avowedly or otherwise, to a system of cheap telegraphing which shall be at the command of all; for intelligence should be in principle like sunshine, at the service of everybody, on the freest terms. What is more, postal telegraphing is a thing all but certain to come to pass. The wires being once stretched, there is little cost thereafter in transmitting even long messages, nnder the use of the improved iustruments whereby writing at one or both ends of the wire is reduced to a minimum of labor. The introduction of the money order system in the Post-office Department was a greater innovation a few years ago than postal telegraphing would be at the present time.

This is a question so eminently practical, so undeniably in the interest of the public, and in accordance with that peculiar American energy which brings new inventions unceremoniously into practical applicatiou, that the result can be but a matter of time. Newspaper enterprise will always find field enough outside of telegraph combinations, to enable it to hold its own against all upstart competition. It is only lack of enterprise and lack of brains on the part of established journalistic undertakings, that can have the least to fear from the inauguration of cheap postal telegraphing; for then the competition would be more on a hasis of absolute merit, and in such a case certainly in the interest of the reading and doing public.

The Associated Press aud the Reuter organizations of moderu times are amongst the most commendable of the fruits of invention and of advancing civilization; their services to the public have been and continue to beinvaluable, thongh they do stand towards unadmitted newspapers sometimes in the guise of a monopoly. Postal telegraphing wonld not do away with any "associated press monopoly;" but on the contrary, while affording to others the opportunity to compete, in the widest dissemination of intelligence, the Associated Press would maintain its individuality in its superiority of news, in the greater value and hetter quality of the matter collected for the general public.

On this principle it is that the general public can now afford to pay a hundred times more for news of every kind transmitted in its interest, inclnding stocks and financial reports, thau can even the most powerful moneyed and individual interests. We recognize it as a demand of the times,—a point to which we have attained in the history of newspapers and telegraphing,—that the transmission of news on which so much depeuds, shonld be ou the freest footing, and entirely untrammeled by dictates or interests of individuals and corporations. This great principle has ever been acted upon by the government—that the telegraph must he subservient to the uses of the governmeut. Who is to care for the interests of the quiet, the unorganized, long-suffering, and in all ages the much-abused and too often slavish public at large? The newspapers, in our day,—and a liberal Associated Press.

Hearth and Home, published by Pettingill, Bates' & Co., No. 37 Park Row, N. Y., contains some very excellent matter. No. 30 begins "Romance of a Rich Young Girl," by Octave Fnillet.

Fourth Annual Report of Yale Scientific School.

The Fourth Annual Report of the Sheffield Scientific School of Yale College has been received—hut unfortunately too late to enable us to incorporate its facts in onr remarks on that subject made in a recent issue. No changes have been made in any of the professorships for several years. We miss the names of A. P. Rockwell, professor on the suhject of Mining, and Charles J. Sheffield, instructor in Assaying; the same gronnd heing well covered, however, hy Professors Norton and Brush. Amongst the instructor's list of names, J. B. Stone, C. E., in Mathematics, is replaced by Daniel H. Wells, C. E.; Beverly S. Bnrton, Ph. B., on Chemistry, by William G. Mixter, Ph. B.; John Avery, M. A., on Physics, is missed; and new instructors have been appointed as follows: Sydney Smith, Ph. B., on Zoölogy; E. T. Nelson, B. A., on Mineralogy; and Henry S. Williams, Ph. B., on Paleontology; Wilhur O. Atwater, B. A., and E. H. Bristol, Ph. B., on Chemistry.

The number of students in 1868-9 was 137; the number of graduates in 1868 was 26. A valuahle list is given of all who have been members of Yale Scientific School since its beginning in 1846, a total of 693; also of all the graduates, numbering to 1868 inclusive, 155.

The following are those permaneutly identified with, aud residing on the Pacific Coast.

1855–8	Ahernethy, William,	Oregon City, Oregon.
1862–3	Blake, Theodore A., B.A. N. Y. Free Acad. (Civil and Min. Eng.)	San Francisco, Cal.
1849–52	Blake, William Phipps, PH. D. (Geologist.) Professor in the College of California; Geologist to the U. S. Pacific R. R. Ex. under Lieut. R. S. Williamson	Washington, D. C.
1848–50	Brewer, Wm. Henry, PH.B., M.A., Botanist to Geological Survey of California; Norton Prof. of Ag. in Yale Coll	New Haven, Conn.
1858–60	Cifuentes, Jose Filomeno, PH.D.	Copiapo, Chili.
1864–6	Clark, Frederick W..	San Francisco, Cal.
1868–9	Dwinelle, Charles H.	Oakland, Cal.
1857	Fisher, R. A., M.D., *al.* Prof. of Chem., Min. and Metall. in Univ. of Cala	San Francisco, Cal.
1861–4	Goodyear, Watson Andrews, PH.B. (Civil and Min. Eng.)	San Francisco, Cal.
1863–5	Hunt, Henry O. (Assayer.)	San Francisco, Cal.
1862–5	Massey, Albert P., PH.D.	San Francisco, Cal.
1859–62	Moore, Gideon E, PH.D. (Chem.) Assayer to the Gould & Curry Min. Co., Va	San Francisco.
1854–5	Ortiz, Pedro P.	Valparaiso, Chili.
1858–60	Rice, Julio Alberto	Parral, Mexico.
1863–6	Thomas, Frederick F., B.A. PH.D. (Assayer.)	Silver Peak, Nev.
1863–5	Throckmorton, S. R., B.A.	San Francisco, Cal.
1848–9	Webster, G. G. M.A. LL.B.	San Francisco, Cal.
1861–2	Wilcox, Edward P.	Waioli, Sandwich Isl.
1860–2	Wilcox, Geo. N.	Waioli, Sandwich Isl.

New Woolen Mills.—The San José Woolen Mannfacturing Company have ordered all their machinery for a six-set mill of the ageuts of the builders, Messrs. W. O. M. Berry & Co., of this city, and it is expected to be shipped at an early day. The machinery ordered is to be Davis & Furber's make, built at their celehrated works, near Lawrence, Mass., except the looms, which are to be Crompton's patent, built at Worcester, Mass. The company have just broke ground for the new mill, at San José, which is to be a three-story building, and intend to have it all ready to receive the machinery by the time it arrives here. They design manufacturing blankets, flannels, and plain and fancy cassimeres.

At Los Gatos (Santa Clara Couuty), a set of woolen machinery is being set up by Mr. W. S. McMurtrie, in connection with his sawmill, to be run by water-power. This a second-hand set of machinery, formerly run hy Mr. Rector, at Oakland. If the enterprise proves successful, it is prohable that new machinery will he added.

Notes on the Hawaiian Eruption of 1868.—The Boston Society of Natural History publishes a quarto pamphlet, pp. 24, by W. T. Brigham, A. M., with two illustrations describing the phenomena of the late eruption, and contributing additional information to our knowledge of the earth's interior through the doings of its greatest known exponent, Mauna Loa.

The Ætna Insurance Company, of Hartford, Conn., held its 50th annual meeting, July 1st, and was attended by James M. Goodwin, who was a director at the organization of the company, and has been ever since.

The "Engineering and Mining Journal."

This is now the title of onr New York cotemporary, which lately came to us as the *American Journal of Mining*. The improved appearance with the new finely-engraved head, is especially noteworthy, and there is at the same time a solid valne to a nnmber of the articles that we find in the first number. Such is that on the very long-spanned *beton* hridge of Coignêt, at St. Dennis in the environs of Paris, which is illustrated—*beton* being merely a fine concrete which has been fonnd snfficiently adhesive in a non-earthquake country to make a strong and durahle flying arch of 196 feet span. The Connecticnt Peat Works are also described; an establishment for cntting or grinding and molding peat into bricks, which, by an outlay of $10,000 is capable of producing 100 tons of peat fuel per day. H. B. Cornwall commences a review of processes that have been tried, and with success latterly, for the desilverization of lead hy means of ziuc.

Western & Co. now fill a field in the *Engineering and Mining Journal*, and in the *Manufacturer and Builder*, which, if creditahly represented by American periodical publications specially devoted to the subjects embraced, will not merely do honor to us ahroad, but will incalculably benefit ourselves in advancing the development of our bonndless resources. It is in the same fie'd that the Mining and Scientific Press has represented, and still serves as the exponent of, the Western progress of the energies and arts of the Gothic race, a phenomenon of historic conquest—of races, of territories, and we may say now of the unreclaimed world itself—more remarkable and more telling in its results for the future, than is the strangely sounding (to us) story of the inroads of the Goths themselves iuto Celtic Europe, at the beginning of the Christian era.

Such publications, and the manner in which they are sustained by contributions of respectable matter, of ideas and facts pointing to general welfare and progress, are the index of the intelligence and capacity of the bodies they represent. Where there is no exhibition of practical thought of a generally useful bearing in the scicnce and intelligence of the better educated or trained and competetent engineers and mechanics, overflowing into the pages of a weekly or monthly periodical in this enlightened day, the conclusion is tolerahly safe that the merit not only of the mass, but especially of the leaders practically and theoretically and qualified to he such, is suhordinate and insignificant in a summing up of the progress of the arts and professions represented.

The Avitor.—To set at rest auy doubts as to the complete snccess of Marriott's aerial steam carriage, the Avitor, a public exhihition will take place at the Mechanics' Pavilion on Stockton street, between Post and Geary, on Tnesday, Jnly 20th, at which time a large number of eminent engineers and capitalists of this city and State will he present to witness this novel invention, in action. On the following day the public will have a chance to witness an exhihition of the same character, at the same place. A committee of eminent engineers has been formed for the purpose of constructing a working Avitor of large size, and one capable of carrying a number of passengers, which will be ready for operation in the course of sixty days.

To Remove Rust.—The removal of rust from a tool or any other iron implement, will be greatly aided by first soaking it for a short time in kerosene oil. It is really wonderful to notice the ease with which rust may he removed after heing thus saturated.

Miss Anna E. Dickinson's lectures have proved the greatest success of any course ever given in San Francisco.

The New Breech Loader.

Considerable interest was manifested at the East, about a year ago, over the introduction of Parker's new breech-loading gun. Gen. Siegel expressed himself very much pleased with it, and ordered a thorough test of its advantages as compared with other breech-loaders in use. The result of this trial was a verdict in favor of the Parker, over all other breech-loaders. The chief advantages of this, over other similar weapons, arises from the fact that the load is placed in a metallic shell, which remains in the gun, uninjured, after the discharge, the same shell being used for scores of times. Common ammunition is also used, instead of expressly prepared or high priced, as is usually required by breech-loaders. The expense of the use of this piece is thereby very much lessened. The weapon and charge is so arranged that, as claimed, it may be loaded and discharged more rapidly than any other, and with perfect safety. A large number of loads may be carried in the pocket, knapsack or pouch. The cost of the gun is less than one-half that of others of the same class. As a sporting gun, it would appear impossible that it could be excelled. The first invoice of these guns received in San Francisco, arrived a few days since, consigned to Mr. Richard Tibbals, agent for the manufacturers. Guns from this invoice may be seen at the store of Messrs. Liddle & Kading, 538 Washington street, and at the laboratory of Mr. T. C. Jessup, over Tucker's jewelry store, on Montgomery street; at either of which places they may be examined by those curious or specially interested in such matters.

The Grass Valley Strike.—Outrageous Proceedings.

The Nevada papers give the particulars of a brutal assault upon two different parties of workmen who were returning home, a few nights since, from their work at the Empire mine. The outrages are charged, either directly or indirectly, to the Miners' Union of that place; and as having been perpetrated because the men were using Giant powder, which the deluded strikers think it is their especial mission to crush out of existence. The *Union*, in alluding to the outrage, says: "This knocking a man down in the dark is a "moral suasion" method of keeping the Empire mine idle. These facts, simply related, are comments sufficient on the state of affairs now existing at Grass Valley. The public have been told not to agitate while such quiet and smoothness exist here." The entire power of the State should be called upon, if necessary, to protect the proprietors of the Grass Valley mines in their undoubted right to employ whichever kind of powder they think best, so long as they can find men who are perfectly willing to use it. Any concession to the strikers on *that* point would be fatal, in the extreme, not only to the mining interests of Grass Valley, but throughout the entire Pacific Coast, as well.

SOLAR SPOTS, according to the observations of Schwabe, continued without intermission for more than thirty years, possess a *periodicity*, the length of the period being eleven years and forty days, measured by the extent of surface of the sun observed by these phenomena. Col. Sabine, to whom was deputed the discussion of the results of the British Colonial magnetic observations, arrived at the remarkable result that the dicennial maxima and minimo magnetic effects coincided with the dicennial period observed by Schwabe in the solar spots, from which it has been inferred that the sun exercises a magnetic influence upon the earth, coincident on the condition of the luminous solar envelope.

Still's Gate Latch.

Mr. John W. Still, of San Francisco, has devised and patented through Dewey & Co., the gate latch here represented, in favor of which many good points are advanced.

A, is the upright of the gate frame, to which the latch is attached. The two screws seen in the engraving constitute its fastening to the gate, holding in place a little vertical rod or pivot (visible upon close examination of the cut) on which the latch swings, regulated by the spring C. When the gate is closed, the notch B holds against the stationary post, preventing the gate from opening without first drawing the ring B sidewards, in such a manner as to compress the spring C; that motion causes the notch B to clear the post, and permits the gate then to open.

Approaching from the other side, the handle D would have to be drawn in the opposite direction. When pushed to, the gate will of itself spring the spiral, C, and bring the notch B to a catch.

The favorable points of Mr. Still's latch are given as follows:

1st. Durability; as he warrants them for ten years, in ordinary wear.

2d. In security; as no kind of stock can open them.

3d. Neatness and elegance of style.

4th. Ease of adjusting to the gate, as there is no mortising and only four screws required. Little time for adjusting the latch is required by the carpenter.

5th. Cheapness.

6th. Convenience; as the gate can readily be opened from either side.

7th. There is comparatively no resistance to the gate closing, in which case the rigid Latch A, supported by the spring B, glides across the inclined plate C, and hooks over the end of it securely.

Testimony as to the working of these latches will be found in our advertising columns. Most of them are manufactured with a flat spring, instead of the spiral spring shown in the engraving, the former answering equally well and is cheaper. This latch is quickly attached to the gate and needs no machinery; the flat spring requiring but a slight cutting away on the frame of the gate.

THE WORKSHOP, published by E. Steiger, No. 22 Frankfort street, New York, is a credit to American periodical literature; No. 6 of Vol. II being received, and beautifully printed and filled as usual with very costly artistic engravings of industrial art; supplying designs and ideas for growing wealth and increased luxury in this country.

A WHITE PINE correspondent mentions favorably the "Black Rock," the "Jennie A," the "Ochotura," the "Home Pile Tunnel Co.," the "Treasure Hill Junction," the "Independence No. 1," and some other mines, which communication has been postponed too long for publication now.

PULMAN, the celebrated palace, eating and sleeping car man, is now building a grand church-car to run on Sunday trains on the Union Pacific Railroad.

Polytechnic Branch of the Mechanics' Institute.

The Ramie and Kindred Textiles.

A large and very intelligent audience attended the first of the polytechnic meetings of the Mechanics' Institute, which was held in the Reading Room, on Saturday evening last, when the Ramié and kindred textiles were under consideration. Being a special meeting of the members of the Institute, the action of the Board of Directors in electing W. W. Hanscomb to fill a vacancy caused by the resignation of George Hickox, was duly ratified. W. B. Ewer, from the committee on the Polytechnic Branch, reported progress and stated that there would be a fuller report made at the next meeting.

Dr. Joseph Silver's paper on the Ramié plant, as adapted to California, was then read. The exhibition of specimens, and various articles of manufacture from it, with explanations, questions and remarks bearing thereupon, occupied about half of the evening. The Ramié is the China or sea grass, of which summer coats were sold and worn by us fifty years ago—called *Ortie de la Chine* by the French, and botanically specified under the varieties of *Urtica Nivea*, *Urtica candicans*, and *Behmeria tenacissima*, the latter being the kind which is supplanting cotton in Louisiana and Texas. Dr. Silver stated that Henry Hughes, an English importer, in San Francisco, has received from a large manufacturer of Bradford, Yorkshire, specimens of new and peculiarly attractive goods, made by interweaving Ramié, instead of silk, with wool—Ramié forming the chain. The same post brought instructions to order from China one hundred tons of sea grass, or Ramié, to be shipped to England; and to follow it up by regular invoices thereafter. Mr. Hughes was requested to order at the same time a large quantity of the seed for California. The letter requests that every effort be made to induce our farmers to cultivate this most valuable plant, because it is about to be a leading staple for goods of many new varieties. Mr. Hughes has ordered an ample supply of seed for wide distribution in this State, and he will buy or make advances on all the Ramié fiber that he can get. The planting and plowing are like corn, the soil is best sandy; the harvesting is done with the machete, like hemp.

The planter does up the fiber in hanks for market. It is then raw fiber, worth ten cents a pound in gold. Preparing it for the factory is a separate industry. It has to be worked over, made fine and bleached, when it loses one-half of its weight. It is then worth sixty cents per pound, and it commands an active market at all times.

In soil, not over twelve feet from permanent water, it will probably stand three cuttings without irrigation in ordinary years. Deep-plowed ground in the foot-hills, well saturated by winter and spring irrigation, natural and artificial, may stand two heavy cuttings without summer watering. Low-lands make coarest fiber but largest crops.

Manufacturers say that it will, by rather rapid advances, effect great and radical changes in the styles of woolen and worsted combinations, known as stuff goods, where its great strength makes it a substitute for silk, and that it will be very largely interwoven with silk itself, as in Japan and India, forming very desirable dress goods. It offers to our agriculturists, in seasons of ordinary rains, a sure source of permanent profit, relieving them from the uncertainties of dependence upon exclusive grain production. Finally, our success in woolen goods leaves no reason to doubt our ability to manufacture cloth from Ramié, not only by itself, but in the various combinations of which it is susceptible.

The samples of raw fiber exhibited were about six feet in length, of a color resembling hemp. A sample of raw fiber, freed from the gummy substance, and ready for marketing, was slightly lighter in color, and done up in skeins or bolts. It is this quality which is worth ten cents per pound, which price is paid in New Orleans by exporters, and which will be commanded here as soon as sufficient quantities are produced.

In the preparation of the fiber the stalk is first soaked in water for a few hours, then passed through a brake similar to a hay-brake, to divest it of the woody portion of the stalk. It is then soaked in water again, and is again passed through the brake, freeing it partially from gum. The third soaking in water takes nearly all the gum out, when it is passed through a brake again. It is then ready for bleaching in the ordinary way, with chlorine.

The time for planting is at the commencement of the rainy season,—November.

A gentleman present exhibited a sample of fiber from a species of milk-weed, which grows wild in large quantities in the San Joaquin Valley, whence it was brought by Frank Howard. It was pronounced by Dr. Silver and other judges present to be highly valuable as a textile. The doctor stated that on the Humboldt River at the crossing of the railroad, there were thousands of acres of wild hemp, which were, in his opinion, fully as valuable as the Ramié. He sent a large quantity of it to Mr. Tubbs, of the San Francisco Cordage Factory, who pronounced it superior, and offered to pay $80 per ton for all that could be furnished. The doctor, however, thought it best to encourage the cultivation of the Ramié, for the reason that it was already seated in commerce.

Dr. Silver has made arrangements so as to be able to supply all who wish, with cuttings and roots, which he is obtaining at New Orleans. They will cost here in coin about what they cost there in currency. Once planted, the Ramié is perennial.

The President stated that the next paper will be read at the next regular monthly meeting, on the first Tuesday of next month, and will be on the subject of "Explosives."

Humboldt Mines.

Mr. A. J. Knapp has shown for several days at the office of the California Mutual Life Insurance Co., a bar of 96 ounces of silver worked at Reno, from 2,800 pounds of ore out of the above named mine. The mine is a new one, located five miles from Oreana. A tunnel has been run about 50 feet along the ledge, and the rock worked came from the face of the tunnel from one to eighteen feet from the surface. The proprietors are sanguine of soon developing a permanently paying mine.. The Piute is a copper mine, near Oreana, Nev.

The ore is chiefly fahl-ore and azurite. A specimen presented to us contains $49 silver, and 25 per cent. copper. Half a ton of similar ore is at present at W. A. Holcomb & Co's warehouse, San Francisco.

AMERICAN INVENTORS AND ENGLISH PATENT AGENTS.—In another column will be found an extract from the London *Engineer* in regard to the multitude of ignorant and irresponsible patent agents with which London swarms at the present time. The *American Artisan* quotes the language of the aforesaid journal, and makes the following pertinent remarks: "It behooves American inventors who desire to secure English patents to be on their guard against London patent agents, only known to them by advertising circulars, who are likely to entrap the unwary by their pretence of possessing peculiar advantages, and offer to do the business on very low terms, but afterwards surprise their clients by additional charges. Every person desiring to take a patent in England should—if he employs an English agent directly—be fully satisfied of his qualifications and character; but he will find it safer to do his business through an American agent of good standing, who, for the sake of his own reputation, will take care to employ only a properly qualified and reliable agent in England."

We need scarcely add,—"We Concur." [EDS. PRESS.

THE COPPER MARKET.—Copper, on the 1st instant, had declined somewhat in the New York market, under the influence of forced sales. Lake Superior was quoted at 21½c.; Baltimore, 22c., with moderate demand. There was no disposition to buy even at these prices, on speculation.

Professional Cards.

Notice To Mining Companies.

The undersigned offers his services to the mining public. Having devoted several years to the study of mining and metallurgy in some of the best schools and works of Europe and being acquainted with the metallurgical treatment of ores as practiced on this coast, he is confident of his ability to render valuable aid to parties employing him.

CHAS. C. RUEGER.

Address, care of Mining and Scientific Press. 23v18

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GEORGE B. ELLERY,

Practical Mining Engineer,

TREASURE CITY,

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2v19tf

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2v15-1qy

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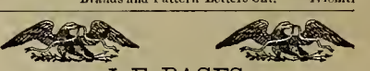

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Items of Patent Law.

The head of the American Patent Office, Mr. Fisher, has recently reversed a decision on appeal from the Board of Examiners in Chief on the strength of the point that in examining applications of patents there should be considered the question of utility rather with regard to the purpose of the invention than to the means of accomplishing it. The purpose proposed, if accomplished, must be usefnl, and the plan must not show the absence of some part obviously essential to the end.

A suit has been brought against the Government itself for infringing on gun patents, at Springfield. In devising the model of the new army gun, the Government has taken what were believed to be the simplest and best features of breech-loading guns wherever it could find them, without stopping to consider whether they were patented or not, being determined to secure the most perfect scheme attainable for making breech-loaders.

In this manner it appears quite a number of patents have been infringed upon. Col. A. B. Ely of Boston, claims the Preston patent breech-lock. An injunction is pending.

On the rejection of an application for a patent, Mr. Fisher has decided that if the application be not renewed within two years after withdrawal its continuity is broken. Before the repealing act of 1861 there existed a provision of law whereby rejected applicants were permitted to withdraw their applications and receive back two-thirds of the fee. Numerous applications of this kind have been reversed, and patents touching these same inventions and points therein, have since been granted.

In the English Patent Office, recently, an intending patentee had lodged a provisional specification, whon another inventor filed one of a similar description, and procured his patent to be the first sealed. The former complained of this, and argued that under the circumstances the Attorney-General should not have allowed the second person to file his patent. The Lord Chancellor, however, pointed out that there was no law to compel a person who had filed a provisional specification to proceed with his invention, and if the applications of other parties were to be uniformly rejected, the country might be deprived of the fruits of the ingenuity of many minds which were working in the same direction.

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Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's Claims and Mill,
Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 300 feet. A force of thirteen men only are required to keep both mill and mine running regularly.
On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which fact goes to prove that a heavy deposit of ore was once contained in the croppings of these shutes, which, by all former and present theories of deep mine workings, came from below, indicating that when such upper ore is proper depth, the lead will develop a mine equal to the Amador or Eureka.
This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.
The last level, 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $1 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.
Now I propose to sell two thirds of this valuable property for $16,000, cash; and any party who desires to purchase a property of this kind—which theory has proven that it requires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a miner engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.
For any further particulars, direct by letter to Wm Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Honohoe & Kelly's Bank.
22v18tf qr WM. BOSWORTH.

A Long Desired Article
FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using
CAMILLE CHAMPOO,
which not only does away with the poor soap so offensive to use, and so injurious to the hair, but it cleans the head, strengthens and beautifies the hair, preserves the color, and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERTON & LUELLING, 723 Mission street, San Francisco, Cal.
HEATHFIELD & BOCLE, Wholesale Druggists, 206 and 208 Battery street, San Francisco, sole Agents for the Pacific Coast. 21v18-3m

Familiar Science.

Food, and How to Eat It.

Cabbage, parsnips, beets, cucumbers and onions, are very indigestible, and should never be eaten by persons who are troubled with a weak stomach.

Tomatoes, apples and similar kinds of fruit should also be eaten by such persons with caution, although they are very easily digested. Such food, when eaten by dyspeptics, is apt to produce intense acidity of the stomach,—followed by sick headache, heartburn, etc.; milk will often produce the same effect. Potatoes, beans and green peas are excellent food, provided they are boiled very soft; but even they must be eaten sparingly.

The reason of all this is found in the unhealthy condition, and consequent slowness of action of the digestive organs, which, with dyspeptics, (those troubled with sour stomachs) is so slow that such food runs into acidity before digestion is effected; then, of course, comes sour stomach, pain in the bowels, sick headache, etc. In the case of beans and peas the mischief is mainly attributable to the indigestible skin with which they are covered. A bean swallowed whole will no more digest than will a cherry stone or a ballast stone.

Good fermented bread, and a tender juicy steak, if well masticated, will seldom turn to acidity. When the stomach is very weak, dispense with the meat, and toast the bread. Flour, somewhat coarsely bolted, is better than very fine flour; it does not turn to acidity so soon, and lays easier, in every way, upon the stomach. *Very coarse* Graham flour and *bran*, however, should be avoided; such food irritates the tender coating of the stomach and bowels, thereby causing a watery effusion and purgation—it operates very much like castor oil, only it irritates more, and in that respect is worse.

Mastication is one of the greatest causes of indigestion. No food should enter the stomach until it has been reduced to a fine, soft pulp, free from lumps, by the action of the teeth and saliva. A close observance of this rule, and a bread diet, to begin with, will in time cure almost any dyspeptic.

Don't Run Up Stairs.

Don't run up stairs; there is no need of it—unless the house is on fire, or some other dread calamity impending. Ladies don't run in the street, nor in the hall; why then should they *run* up stairs, and then complain because it is such hard work, or because the stairs are so high? There is as much philosophy in getting up stairs, as there is in hoisting a bale of goods into an upper story. It is no more difficult to go up stairs than it is to do any other kind of work, if you only take the proper time for it. In going up stairs you have not only the forward motion of walking to accomplish; but you have also to hoist some 130 or 170 pounds to the hight of the flight. This latter is work, and you must take time for it, just as the man does when he hoists an equal weight of merchandise to the upper floor. See how slow it rises; it is no harder work to do that, than it is to perform any other labor, if he takes his time for it—and the *workman* generally does that.

There is really but little more difficulty in ascending a flight of stairs, than there is in walking three times the distance in a straight line, if we only take about the same time to ascend, that we should in walking three times the distance of ascent. Walk up stairs slowly; rest at each landing, (and there should always be a landing, at least as often as every ten feet of elevation) and you will reach the top without exhaustion or fatigue.

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

FOR THE WEEK ENDING JUNE 29th.

MACHINE FOR KYANIZING WOOD.—David W. Hunt, San Francisco, Cal.—91,848, antedated June 22d, 1869.

This invention is designed to provide an improved machine for retaining the wood in position, while the substances or solution for kyanizing are forced into its pores. It is in fact a cheap device for forcing the solution into the pores of the wood. Instead of placing a stick of timber in a boiler or expeusive cylinder, Mr. Hunt simply places a plate upon one end of a stick of timber, so constructed, by having its edges turned up, as to make a water-tight joint by being pressed against the end of the timber, and at the same time leave a small chamber between the face of the plate and the end of the stick. Into this chamber is forced, by hydraulic pressure, the preserving fluid, be it oil, liquid sulphates, creosote, or any other kinds of liquid. The pressure forces the liquid into and along the pores of the wood, driving the sap before it as far as may be desired—through the entire stick and out at the top, or only for a short distance, as for the bottom of fence posts, or the ends of timber designed to be placed in brick walls, where, without some such preserving process they soon decay, by means of the moisture abstracted from the bricks.

A large number of these machines may be constructed at small cost, and by meaus of a small force pump may be operated in the field or shop, or wherever else it may be convenient to affect the preservation process. The plate is held in place by connecting rods passing through a similar plate fixed upon the opposite end of the timber. Mr. Hunt is an old and ingenious inventor, and one who has given much time to kyanizing presses, to wood pavements, etc.

PROCESS OF ROASTING AURIFEROUS SULPHURETS.—Wm. Bruckner, Central City, Colorado Territory.—92,009.

This invention relates to the application of certain materials, in a particular manner, so as to more readily and effectively accomplish the roasting of gold-bearing sulphurets. Mr. B. is inventor of the well-known Bruckner's revolving furnace, exhibited at the Mechanics' Pavilion in this city in 1866. He is now operating successfully with his invention in Colorado.

SUBMARINE FOUNDATION.—Wm. H. Foye, San Francisco, Cal.—92,033.

The object of this invention is to provide mechanical means by which the construction of the foundation of submarine walls is greatly facilitated. It also relates to the foundation of the walls for buildings and other structures erected upon ground and in countries subject to earthquakes. In the construction, granite, concrete, or any other suitable substance is employed—concrete being generally preferred, especially for submarine works. As this invention is one of much practical value and interest, we propose, at an early day to illustrate and fully describe it.

STEAM ENGINE GOVERNOR.—William H. Howlaud, San Francisco, Cal.—92,051.

This invention consists of two or more light curved springs, pivoted at one end to a loosely moving collar, by which the valve stem is operated, and which are fastened at the other end to the spindle or disk from which they receive their rotary motion. The weights consist of short cylinders, with conical ends, placed within the springs, and having their cones formed at such an angle that when in place they bear against and support each other. The weights are kept in place by grooves, in which the springs rest, so that they are thrown out or drawn in by the varying speed.

STEAM ENGINE VALVE.—William H. Howland, Sau Francisco, Cal.—92,052.

This invention cousists of an instrument which may be used as a gauge-cock for steam boilers, or au oil cup which may introduce a certain quantity of the lubricant, as may be desired. It may also be employed as a faucet for beer or other liquids; a throttle-valve for steam pipes, and for all purposes where an ordinary stop-cock is employed; but with the advantage of always remaining tight, without being tapered, while it is not liable to become fastened in its seat. It also possesses the still further advantage of costing much less in its construction than any other cock.

Both this and the governor noticed above, and also invented by Mr. Howland, have been already referred to in our columns.

FOR THE WEEK ENDING JULY 6TH.

FUNNEL.—Henry F. Lawrence, Vallejo, California.

IMPROVED RAILWAY.—Sutton and Crowell, San Francisco.

MANUFACTURE OF SUGAR. — Claus Spreckels, San Francisco. Re-issue.

MACHINE FOR WASHING DISHES, KNIVES AND FORKS, ETC.—Charles M. Leland, Central City, Colorado Territory.—92,323.

California Academy of Sciences.

An adjourned meeting of the California Academy of Natural Sciences was held on Tuesday evening, Dr. J. G. Cooper in the Chair.

Messrs. A. T. Winn and Isaac Wormser, Consul of Wurtemberg, were elected resident members.

Dr. Behr stated that in a recent invoice of prepared insects which he had received from Acapulco, was a species of Northern butterfly. The specimen was caught in a mine, back of Acapulco, at an elevation of 2,000 feet above the sea; and he thought it would be a matter of interest to know how far the Northern species of butterfly went into the tropics.

Prof. Bolander gave an interesting account of a trip which he had taken among the Sierras, and a description of Emigrant Gap and Bear Valley, in Nevada county, and the country surrounding. His theory is that that beautiful valley was once a lake; large worn boulders and pebbles gave ample evidence of this. The appearance of the mountains showed the effects of glaciers, and he had no doubt that the cañon was produced by one of these immense fields of ice.

Mr. H. P. Carlton, who accompanied Prof Bolander, stated that he had made a collection of shells from the mountains in the neighborhood of Cisco.

A large collection of plants from Oregon were then exhibited. They had been prepared with great care, and were exceedingly beautiful.

Dr. Henry Gibbons, Senior, then presented a communication from J. M. Upham, of Rio Vista, which was read. Mr. Upham stated that the remains of several Indians had been exhumed near that place. One, the body of a woman, was found buried in a sitting posture, while the men were lying on their sides, in a cramped up position. the skull of the woman had been secured by a gentleman and brought to this city. All of the bones were gathered up by the Chinamen working at the place where they were found and burned. Mr. Upham then spoke of the reclamation of Sherman Island. Forty-seven miles of levee, five feet in hight, had been built around the island, at a cost of $80,000. He thought if a committee from the Academy would visit that locality they would be able to collect much valuable information.

The members then entered into a very interesting discussion in regard to the tule lands of California, and the reclamation of them for agricultural purposes.

Cholera—How to Cure It.—At the commencement of the diarrhœa, which always precedes an attack of the cholera, take a teaspoonful of the Pain Killer in sugar and water (hot if convenient), and then bathe freely the stomach and bowels with the Pain Killer clear. Should the diarrhœa or cramps continue, repeat the dose every fifteen or twenty minutes till the patient is relieved. In extreme cases two or more teaspoonfuls may be given at a dose. The Pain Killer, as an internal remedy, has no equal. In cases of Summer Complaint, Dyspepsia, Dysentery, Asthma, it cures in one night by taking it internally, and bathing with it freely. Its action is like magic when externally applied to Bad Sores, Burns, Scalds, and Sprains. For Toothache, don't fail to try it. In short it is a *Pain Killer.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents. jy1m

ADDRESS WANTED.—We are desirous of communicating with Allen Oliver, lately of Jamestown, Tuolumne County, California. tf

RETURNED.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

PHOTOGRAPHY.—For CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

The Golden Gate Latch.

Invented by John W. Still, of San Francisco, Patent obtained February 2d, 1869, through the MINING AND SCIENTIFIC PRESS PATENT AGENCY, is rapidly becoming the leading Latch of America, on account of its real worth, as attested by all who have used it. The inventor of this splendid improvement justly claims superiority over all others now in use.

1st. Durability, as he warrants them for ten years in ordinary wear.
2d. In security, as no kind of stock can open them.
3d. Neatness and elegance of style.
4th. Ease of adjusting to the gate, as there is no mortising and only four screws required. Not one-half the time of adjusting the ordinary latch is required, and of course better for the carpenter.
5th. Cheapness.
6th. Convenience, as the gate can readily be opened from either side.
7th. There is comparatively no resistance to the gate closing, in which case the rigid Latch A, supported by the spring B, glides across the inclined plate C, and books over the end of it securely.

And we extract a portion of one of the many letters of commendation the inventor has received, as follows: "I have for some time been using your 'Golden' Gate Latch, both on my barn, doors and gates, and for security, durability and convenience, I have met with nothing to compare with it. You have properly named it as well on account of its golden virtue as to designate from whence it enumerates; and I can assure you I am proud to know that California has the honor of working out the vexed gate-latch problem."

Mr. Still having made arrangements to have this magnificent Latch manufactured East in the most durable and elegant style, and in quantities sufficient to supply the United States, will furnish them on the most liberal terms. All communications in reference to it addressed to him through the San Francisco Post Office will be promptly attended to.

N. W. SPAULDING,
Saw Smithing and Repairing
ESTABLISHMENT.

Nos. 17 and 19 Fremont St., near Market,
MANUFACTURER OF
SPAULDING'S
Patent Tooth Circular Saws.
They have proved themselves to be the most durable and economical Saws in the World.
EACH SAW IS WARRANTED IN EVERY RESPECT.
Particular attention paid to construction of
Portable & Stationary Saw Mills.
MILLS FURNISHED AT SHORT NOTICE,
At the lowest Market Prices.

Pacific Mail Steamship Co's
STEAMSHIPS FOR
NEW YORK, JAPAN AND CHINA.

LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the **10th, 17th** and **30th** of each month that has **30** days.

On the **10th, 18th** and **30th** of each month that has **31** days.

When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding; when the 17th falls on Sunday, they will leave on the Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departure of the 17th or 18th is expected to connect with the French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America. Through tickets can be obtained.

The following Steamships will be dispatched on dates as given below:

July 9—GOLDEN CITY.....Capt. Wm. F. Lapidge,
Connecting with ALASKA, Capt. Gray.
July 17—MONTANA.....Capt E. S. Farnsworth,
Connecting with HENRY CHAUNCEY, Capt. Connor.
July 30—COLORADO.....Capt. Wm. H. Parker,
Connecting with ARIZONA, Capt. Maury.

Passengers berthed through. Baggage checked through. One hundred pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets to Liverpool by the "Inman" and "National" Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco, where may also be obtained orders for passage from Liverpool or Southampton to San Francisco, either via New York or St. Thomas—if desired an amount of £10 to £20 will be advanced with the above orders. Holders of orders will be required to identify themselves to the Agents in England.

For Merchandise and Freight to New York and Way Ports, Company's Form of Bill Lading only used.

No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.

The Steamship GREAT REPUBLIC, Capt. Cavarly, will be dispatched for YOKOHAMA and HONGKONG on SATURDAY, July 3d, 1869, at noon connecting at YOKOHAMA with the steamer NEW YORK for SHANGHAI. Shippers of freight to China or Japan are requested to mark on each package its destination.

For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.

RAILROAD PROGRESS.

THE stringency of the money market has as yet failed to exert any unfavorable influence on railroad work, anywhere throughout the Pacific slope. Work upon unfinished roads and portions of roads, appears to be pushed ahead with as much energy as ever. We report progress on the various roads since our last reference, as follows:

THE WESTERN PACIFIC.—One hundred and fifty men are at work upon the bridge over the Mokelumne river, which will be completed by the first of August, when the cars will commence their regular trips to Stockton. Quite a large number of men who have been at work around Stockton, have been transferred, the past week, to the Oakland end of the road, where there are now between two and three thousand Chinamen at work.

THE OAKLAND STREET RAILROAD.—The grading upon this road is being rapidly pushed forward. The timber and iron is already on the ground, and track laying will soon be commenced. This project is not expected to be a profitable enterprise at first; but it will greatly enhance the value of real estate along its line, and will eventually become a dividend-paying investment.

THE CALIFORNIA PACIFIC track-layers have about or quite reached Knight's Landing, where a mile of tule land will delay them a while for piling. The road will reach Marysville by the middle of October.

MARYSVILLE TO GRASS VALLEY.—A road between these two points is much talked of. The topography of the country through which it would pass is very favorable. The cost of such a road would be quite small—not more, it is thought, than would be the cost of the much shorter route from Grass Valley to Colfax.

PETALUMA TO CLOVERDALE.—Since the impression has gone abroad that the projected Sausalito and Humboldt road will not be built, a strong independent movement has been made for connecting Cloverdale by rail with Petaluma, and articles of incorporation have been filed with a capital of $1,400,000 for such a work. This road, if built, may at any future time be used as one of the links for the Humboldt road, which *must*, sooner or later, be constructed. We are still quite confident in the belief that the Vallejo project will be carried through, and at a very early day.

THE SAN QUENTIN AND SAN RAFAEL RAILROAD Co. have advertised for, if not already received, bids for the construction of a road between those two points.

RAILROAD AND BOAT TO SAN JOSE.—A company has been formed, which appears to mean business, for the construction of a railroad from San José *via* Santa Clara to Alviso, from which latter place a line of fast steamers will run to San Francisco. A horse railroad between Santa Clara and San José is now nearly ready to go into operation, which may possibly form a portion of the line first alluded to. This road, if built, will owe its existence mainly to the exorbitant freight charges of the San José road—bad policy on the part of the latter company.

OAKLAND AND SAN JOSE.—It is said that work will be commenced for the extension of the Alameda railroad to Warm Springs and San Jose, as soon as the Western Pacific is completed to Oakland. So it appears that San José promises soon to be pretty well "connected" with San Francisco—by the San José road on the west side of the bay; the Alameda road on the east side, and the Alviso road and steamboat line *through* the bay.

LOS ANGELES AND SAN PEDRO.—The cars are running out ten miles from San Pedro, on this road. The work is being pushed rapidly towards its completion; 200 men, and more teams have lately been added to the working force. The iron horse will soon be steaming into the city of Angels.

MARYSVILLE TO OREGON.—Work on this road is still being rapidly pushed forward. We hear nothing definite with regard to the project of purchasing the Oroville road.

THE VIRGINIA AND TRUCKEE ROAD, it is now confidently anticipated, will be completed by the 1st of December, perhaps two or three weeks sooner. The monthly pay roll now amounts to about $120,000. The road-bed is nearly ready for the track. The tunnels will all be completed in about six weeks. The completion of this road will be a great thing for Virginia City, and all concerned in the Comstock mines.

WHITE PINE.—Arrangements are being made for the construction of an incline tramway between Hamilton City and the Pogonip Heights of Treasure Hill. The distance is only about 1,000 feet; but a great saving of time and expense in the transportation of ores, etc., will accrue from this improvement. The down cars will draw up the empty ones by a rope passing over a large pulley at the top. Mr. Richardson, the projector, expects to drive the "last spike" inside of a month.

THE NORTHERN PACIFIC.—Surveying parties are out in various parts of the route, examining the country, and negotiations are at the same time pending, looking to an early commencement and vigorous prosecution of the enterprise. Those who have the matter in hand appear to be very decided with regard to an early completion of the work. Within a few months a survey to locate the line of the road, definitely, will be made, and the capitalists who have the enterprise in hand promise that it shall be commenced from the lake side at an early day.

THE SOUTHERN PACIFIC.—The new company which has this enterprise in hand are still at work with the end in view of an early construction of the road. A spirited railroad meeting was held in San Diego, last week, with the view of securing a large land donation, which may be offered as an inducement for the company to make that port its western terminus. The result of Gen. Fremont's visit to Europe is anxiously awaited.

BRAINWORK.—Hard thinking is the most exhausting of all labor. After long-continued muscular exertion comes the blessed balsam—sleep, to recruit the system. But when his brain has been upon the stretch all day long, slumber often flies from the pillow of the man of many anxieties, and schemes and cares. Even if he sleeps he carries his daylight thoughts and perplexities with him into his dreams, and repose does not refresh him. Let all who are troubled with restlessness from this or any other cause resort to Drake's Plantation Bitters for relief. This unequaled vegetable tonic and alterative is also a gentle anodyne—it soothes the over-worked brain, calms the agitated nerves, and soon, despite of care or grief or anxiety, "steeps the senses in forgetfulness." A dose taken at bedtime will secure a good night's rest, and another in the morning an appetite for breakfast and such a condition of the stomach as will promote digestion.

THREE HUNDRED large mahogany logs from Central America, at much lower rates than Eastern mahogany, at Hobbs, Gilmore & Co's Box Factory, Market street, near Bealo. **

New Mining Advertisements.

George Washington Silver Mining Company, White Pine, Nevada.

NOTICE.—The Annual Meeting of the Stockholders of the above named Company, for the election of Trustees for the ensuing year, will be held at the office of the Company, No. 10 Stevenson Building, S. W. corner Montgomery and California streets, on FRIDAY, the 23d day of July, 1869, at 4 o'clock P. M.. Per order.

THOS. J. OWENS, Secretary.

San Francisco, July 16, 1869. jy17

Thunderbolt Mill and Mining Company, White Pine, Nevada.

NOTICE.—The Annual Meeting of the Stockholders of the above named Company, for the election of Trustees for the ensuing year, will be held at the office of the Company, No 10 Stevenson Building, S. W. corner Montgomery and California streets, on FRIDAY, July 23d, 1869, at 4 o'clock P. M. Per order. THOS. J. OWENS, Secretary.

San Francisco, July 16, 1869. jy17

Mining Notices—Continued.

Daniel Webster Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. jy3

Evening Star, No. 1, Silver Mining Company Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of June, 1869, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Saturday, the thirty-first day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-first day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. je26

North Star Gold Mining Company.—Location of Works: Grass Valley, Nevada County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the fourth day of June, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm H V Cronise, Trustee	4	1	$ 20 00
G F Fargo	5	87	1740 00
Thomas Hope	6	87	1740 00
Jas H Crossman	8	1	20 00
P G Partridge	10	37	740 00
W E Dean	11	1	20 00
A E Hill, Trustee	16	20	400 00
E N Torrey	25	5	100 00
Geo W Beaver	28	29	580 00
A E Hill, Trustee	29	15	300 00
P G Partridge	31	1	20 00
Samuel P Holden	35	5	100 00
Samuel P Holden	36	5	100 00
Violetta Clement	39	10	200 00
Benjamin Brady	42	10	200 00
Benjamin C Wright	44	5	100 00
Thos J Poulterer	45	50	1000 00
A E Hill, Trustee	47	15	300 00
A E Hill, Trustee	52	10	200 00
A E Hill, Trustee	57	10	200 00
A E Hill, Trustee	58	10	200 00
A E Hill, Trustee	59	10	200 00
A E Hill, Trustee	64	65	1300 00
A E Hill, Trustee	65	75	1500 00
A E Hill, Trustee	69	10	200 00
W L Torrey	72	5	100 00
A E Hill, Trustee	73	5	100 00
A E Hill, Trustee		2	40 00
A E Hill, Trustee	82	90	1800 00
A E Hill, Trustee	85	5	100 00
A E Hill, Trustee	86	5	100 00
L Kuhn, Trustee		5	100 00
L Kuhn, Trustee		5	100 00
A E Hill, Trustee		25	500 00
A E Hill, Trustee		25	500 00
A E Hill, Trustee	101	25	500 00
Thos J Poulterer	10	10	200 00
A E Hill, Trustee	103	15	300 00
A E Hill, Trustee	104	5	100 00
A E Hill, Trustee	105	5	100 00
E T Pease	106	10	200 00
E T Pease	107	10	200 00
E T Pease	108	10	200 00
E T Pease	109	10	200 00
E T Pease	110	10	200 00
E T Pease	111	10	200 00
E T Pease	114	15	300 00
R T Thomas	117	50	1000 00
M Bettman	118	5	100 00
A E Hill, Trustee	120	32	640 00
A E Hill, Trustee	123	5	100 00
A E Hill, Trustee	125	10	200 00
Wm B Allen	127	5	100 00
McDonald & Whitney, Trus	129	3	60 00
E E Pease	130	15	300 00
Charles Stevens	131	10	200 00
Charles Stevens	132	5	100 00
Charles Stevens	133	10	200 00
John W Titcomb	134	10	200 00
Thos J Poulterer	135	50	1000 00
John W Titcomb	138	10	200 00
A E Hill, Trustee	139	10	200 00
Geo W Beaver	143	50	1000 00
G F Fargo	144	10	200 00
A H Lissak, Jr., Trustee	146	5	100 00
George A Raymond	147	5	100 00
A H Lissak, Jr., Trustee	148	5	100 00
A K P Harmon, Trustee	149	1	20 00
W R Roarn, Trustee	150	750	15000 00
A E Hill, Trustee	153	74	1480 00
A E Hill, Trustee	155	20	400 00
A E Hill, Trustee	157	6	120 00
A E Hill, Trustee	158	500	10000 00
A E Hill, Trustee	159	30	600 00
A E Hill, Trustee	160	100	2000 00
A E Hill, Trustee	161	10	200 00
A E Hill, Trustee	162	130	2600 00
A E Hill, Trustee	164	56	1120 00
A E Hill, Trustee	165	23	460 00
A E Hill, Trustee	166	16	320 00
A E Hill, Trustee	167	3	60 00
F A Hassey	168	5	100 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of June, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 10 at No 402 Montgomery street, San Francisco, on Friday, the thirtieth day of July, 1869, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. W. COLBURN, Secretary.

Office, room No. 10 second floor of No. 402 Montgomery street, San Francisco jy10

George Washington Silver Mining Company. White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of ten cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the tenth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-sixth day of August, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.

Office, Stevenson Building, San Francisco. jy10

Engraved to Order.—Persons who desire to illustrate their individual establishments or business, should give us their orders for Engraving and Printing, and we will guarantee good work and reasonable prices.

DEWEY & CO.,

Patent Agents, Publishers and Job Printers, 414 Clay st.

Gold Hill Tunneling Gold and Silver Mining Company.—Location: Gold Hill, Storey County, State of Nevada.

The Fifth Annual Meeting of the Stockholders of the above named Company, for the election of Trustees to serve for the ensuing year, will be held on SATURDAY, the seventeenth day of July, 1869, at 3½ o'clock P. M., at their office, 414 California street, San Francisco, Cal.

R. WEGENER, Secretary.

Office, 414 California street, San Francisco. je19

I. X. L. Gold and Silver Mining Company.—Location of Mine: Silver Mountain District, Alpine County, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the tenth day of May, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. shares.	Amount.
Bridges, Mary C.	360	12¼	$18 15
Senter, Riley	55	10	15 00
Clark, T B	375	10	15 00
Clark, T B	386	2 3/8	33 75
Long, E M	354	10	15 00
Phillips, Chas C	60	4¾	6 65
Vega, F de la	154	11	16 50
Jardin, Henry	148	5	7 50
Jardin, Henry	304	3	4 50
Jardin, Henry	320	12¼	18 75
Jardin, Henry	331	5	7 50
Hepburn, James	116	5	7 50
Hepburn, James	158	5	7 50
Hepburn, James	217	10	15 00
Bolts, John	226	8	12 00
Hatch, F S	312	8	12 00
Cutter, R S	366	3¾	5 25
Cutter, R S	384	10	15 00
Long, M	385	22 7-16	33 60

And in accordance with law, and an order of the Board of Trustees, made on the tenth (10th) day of May, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Olney & Co., auctioneers, No. 426 Montgomery street, San Francisco, on Wednesday, the fourteenth day of July, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. CROWNINSHIELD, Secretary.

Office, Pioneer Hall, Montgomery street, up stairs, San Francisco. jy6

POSTPONEMENT.—The above sale is hereby postponed until Monday, the twenty-sixth day of July, 1869, at the same hour and place. By order of the Board of Trustees.

jy17 J. CROWNINSDIELD, Secretary.

San Fernando Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of the Stockholders of the San Fernando Tunnel and Silver Mining Company will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 3 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.

Office, No. 16 Stevenson Building, corner Montgomery and California streets.

San Francisco, July 1, 1869. jy3

Sedgley Tunnel and Silver Mining Company. White Pine Mining District, State of Nevada.

The first Annual Meeting of the Stockholders of the Stockholders of the Sedgley Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 1 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.

Office, No. 16 Stevenson Building, corner of Montgomery and California streets.

San Francisco, July 1, 1869. jy3

Thunderbolt Mill and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of five cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twelfth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-sixth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.

Office, Stevenson Building, San Francisco, Cal. jy10

White Cloud Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of Stockholders of the White Cloud Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 2 o'clock P M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

OEOROE L. SMITH, Secretary.

Office, No. 16 Stevenson Building, corner of Montgomery and California streets.

San Francisco, July 1, 1869. jy3

Willimantic Silver Mining Company. Location of works White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twentieth day of May, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the nineteenth day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the tenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco. je26

Yosemite Mining Company, Humboldt County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of July, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco.

Any stock upon which said assessment shall remain unpaid on the seventh day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-fourth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary *pro tem.*

Office, No. 220 Clay street, San Francisco, jy10

Ocean Fertilisers.

All along the Coastof New Jersey, it is well known, coral, composed largely of phosphatic and nitrogenous matter, is forming so rapidly as to threatsu interruption to navigation in some places. Being an excellent fertilizer, it is being collscted with strong forks and grappling hooks; aud in many instances the deposits are so large and heavy, that they cannot be lifted to the surface. By passing the entire mass through a crushing machine, everything is crushed to fragments. At the same time a liberal amount of dry muck is mingled with the coral for the purpose of absorbing the ammoniacal material, and thus retaining it until the compost can be applied to the soil. This new fertilizer promises to be a source of rich revenue to the State.

Again, according to Humboldt, there exists in the Atlantic Ocean, a little to the West of the Azores, a space seven times lnrger thau all Germany, completely covered with a dense mass of marine vegetation. M. Jules Lavinierd has proposed to the Societe d'Agriculture to make these floating meadows, as they are called, subservient to the purposes of agriculture. His suggestion is, that the ships occupied during the summer in cod fishing should, in other seasons, be employed in conveying this abnndant manure to the Azores, where an entrepot could be established, the weeds pressed and dried, and the mineral salts they contain extracted. Aualysis has shown that these weeds possess the same fertiliziug properties as those employed as manure on the French coasts. M. Lavinisrd calculates that these floating meadows produce annually sufficient vegetable mattsr to manure 1,350,000,000 acres of land. An extent of country equal to the entire area of the United States previous to the annexatiou of Alaska.

Lecture-Room Lightning—The Monster Coil.—In our summary of Scientific Progress for June 5th, we gave a description of the new monster induction coil at the London Polytechnic Institution. *All the Year Round*, in a recent article, thus describes the curious effects produced by the twenty-nine-inch spark in the lecture room: "In the darkened theater at the Polytechnic, the long flash lights up the room and the audience with the peculiar lurid glare so well known as an effect of brilliant lightning at uight, and displays the features and action of every one present. But it is curious to note that the flash being of instantaneous duration only, it allows no *motion* to be seen. We should think, if guided by our consciousness alone, that the flash lasted an appreciable time; but this would be an error, due to the persistence of the impression ou the eye, after the flash had ceased. If the room be made perfectly dark, and if the spectators all raise their arms and wave their hands to and fro as quickly as they can, the flash will display the position of the arms, but not the movements of the hands. *While the flash lasts, the hand has no time to move*, and is consequently seen, as if motionless, in the position in which the flash finds it. It is in contemplation to exhibit the same effect in a more complete way by affixing a picture to a revolving disk. When the disk revolves so rapidly that no outlines of the picture can be distinguished by meaus of any ordinary light, they will be perfectly seen iu a darkened room by the light of the flash. It lasts so short a time that the revolving disk does uot change its position in the brief period.

Preserved Pineapple.—Select nice ripe apples, pare them and tear them from the core with a eilver fork. Then weigh them, allowing a pound of engar to a pound of fruit. Pnt the sugar and fruit together in a preserving kettle and let them simmer slowly for an hour and a half. This preserve will keep for a year or two if sealed closely and kept iu a cool, dry closet.

An Excellent application for a Foot Wounded by a Rusty Nail.—Just as soon as possible after the foot is hurt put some hot ashes in half a pail of water and immerse the foot thereiu while as hot as cau be to be comfortable, and keep it in half an hour. This remedy will draw out soreness and inflammation. It has been tested and found effectual.

Machinists and Foundries.

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,

SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Aequires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,

SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Amoag other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iroa Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first-class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Goings of superior tone. All Kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. GALLAGHER. J. H. WEED V. KINGWELL.
9v13-1y

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco,

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.
10v18qr

JAMES MACKEN,

COPPERSMITH,

226 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.
13v11

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

6v11tqr No. 23 Fremont street, San Francisco.

Miners' Foundry

—AND—

MACHINE WORKS

Nos. 245 to 255 First Street,

San Francisco.

HOWLAND, ANGELL & CO.,

PROPRIETORS,

Manufacturers of Machinery for

QUARTZ MILLS.	**FLOUR MILLS,**
SAW MILLS,	**SUGAR MILLS,**
POWDER MILLS,	**PAPER MILLS**

Steam Engines of all Kinds.
Amalgamators of all Kinds.

MINING PUMPS,	**HOISTING WORKS,**
OIL WELL TOOLS,	**ROCK BREAKERS,**

—AND—

Machinery and Castings of all kinds, either of Iron or Brass.

Boilers and Sheet Iron Work in all its Branches.

Shoes and Dies of White Iron, manufactured for and imported by us expressly for this purpose, and will last 25 per cent. longer than any other made on this coast.

Russia Iron Screens, of any degree of fineness. We are the only manufacturers on this coast of the

HICKS ENGINE,

The most compact, simple in construction, and durable, of any Engine in use.

W. H. HOWLAND, H. B. ANGELL,
13v14-qr **CYRUS PALMER.**

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, aad Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their Inventions. 1v16tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

14v11 Sacramento City

THE RISDON

Iron and Locomotive Works.

Incorporated, April 30, 1868. Capital, $1,000,000.

Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.

Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Devoe, Dinsmore & Co., San Francisco.

Steam Engine Builders, Boiler Makers,

MACHINISTS AND FOUNDRYMEN.

All work in their line attended to with promptness and dispatch.

Directors:

S. F. Butterworth,	Chas. E. McLane,
Lloyd Tevis,	John N. Risdon,
Jas. Pollock,	Joseph Moore.
Ben. Holladay,	

JOHN N. RISDON, President.

Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Meaul, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

G. T. PRACY.

MACHINE WORKS,

NOS. 109 and 111 MISSION STREET,

Between Main and Spear.

New and second-hand

Engines and Boilers,

FOR SALE,

Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

MANUFACTURER OF

Lathes, Drills,

And MILL MACHINERY of every description.

PRACY'S

New and Improved

STEAM ENGINE

REGULATORS,

The best and cheapest yet invented—manufactured and for sale. Parties are invited to examine it in practical operation.

F. A. HUNTINGTON'S

Shingle Machines

on hand.

Particular attention paid to Repairing.

☞ All work guaranteed to be done in a first-class manner, and at the lowest rates. 12v17tf

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

ap17-3m **113** Beale street, near Mission, S. F.

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,

Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES,

Of a superior make. manufacturer of the celebrated

MONITOR SAFE.

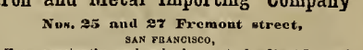
BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.

Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the

1v17tf United States

PACIFIC FILE WORKS,



No. 53 Beale Street, bet. Market and Mission,

SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867

2v17-3m T. G. DURNING & CO.

GLASGOW

Iron and Metal Importing Company

Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE, Manage.

Removal.

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel, Files,

Etc., Shear, Spring, German, Plow, Blister and Toe Calk Steel; manufacturers of

Mill Picks, Sledges, Hammers, Picks,

Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

Have removed to **13 and 15 Fremont street,** near Market, San Francisco.

10v14qr

CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

143 Beale St., bet. Mission and Howard,

SAN FRANCISCO.

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17-qy **J. WEICHHART, Proprietor.**

By Mail.—The *Mining and Scientific Press* will be sent by mail to any part of the civilized world. In case of removal subscribers have only to inform us of the post office address of the old and new location, and the paper will be sent accordingly.

Machinery.

VARNEY'S
PATENT AMALGAMATOR.

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has everrequired repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

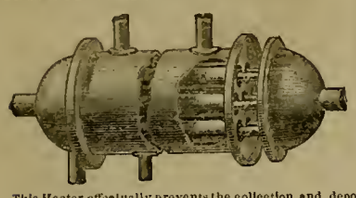
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, **220** Fremont street,

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

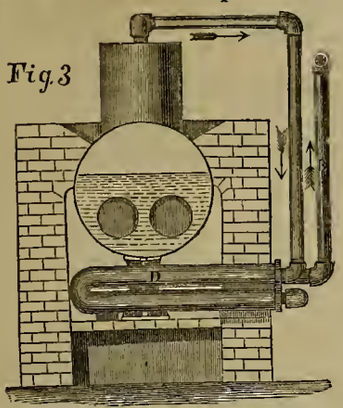
WM. B. CROSS,

16v18-3m Patentee, Sacramento, Cal.

Important to every one using Steam for any purpose.

CARVALHO'S
Patent Steam Superheater

Fig. 3



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1869.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

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"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

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"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 55 deg.—an increase of 20 deg."

CAREW MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.

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Awarded Silver Medal, American Institute, New York, 1865.

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JOHN L. CONSTABLE, Engineer. 25v18tf

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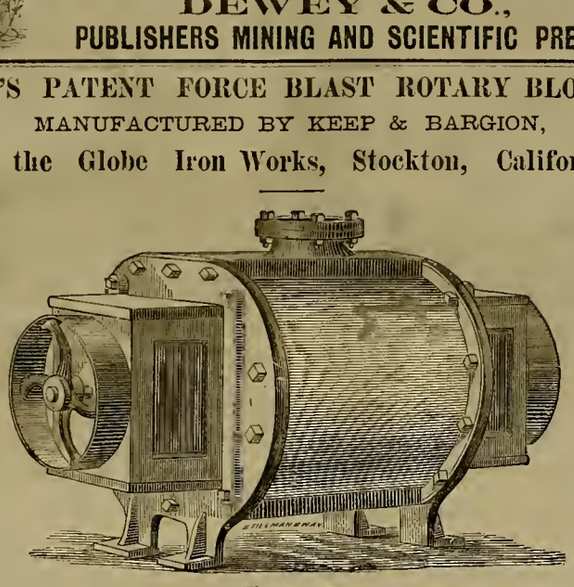

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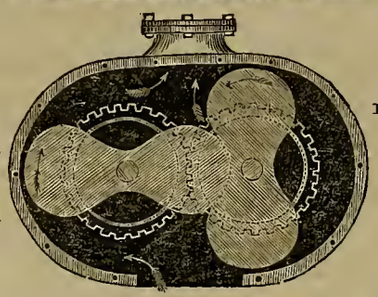

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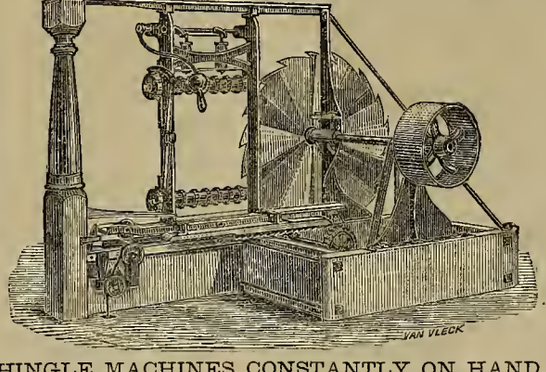

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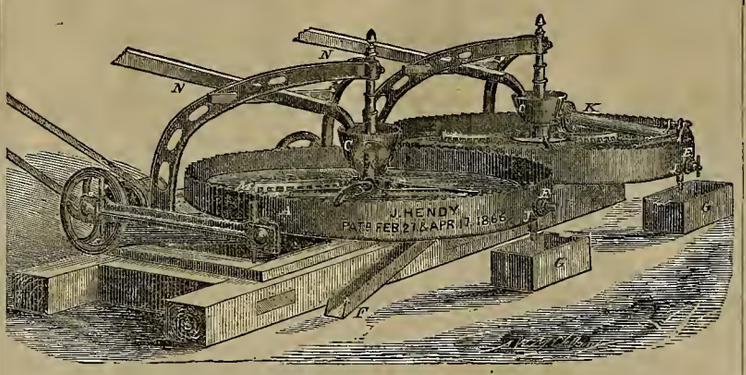

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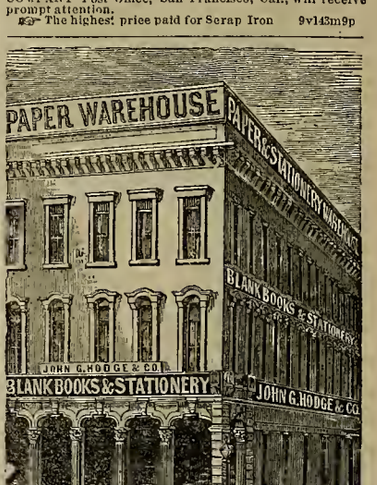

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SAN FRANCISCO, SATURDAY, JULY 24, 1869.

VOLUME XIX. Number 4.

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FRANCE BECOMING MORE SELF-SUSTAINING.—France, at the present time, appears to be in an unusual healthy state—financially. Her imports during the first quarter of the present year have materially decreased, while there has at the same time been a decided increase in her exports—an evidence that she is making unusual exertions to sustain herself independent of her neighbors, and other foreign nations. The importance of such a policy becomes especially apparent in view of the present political crisis, and uncertainty of the European status.

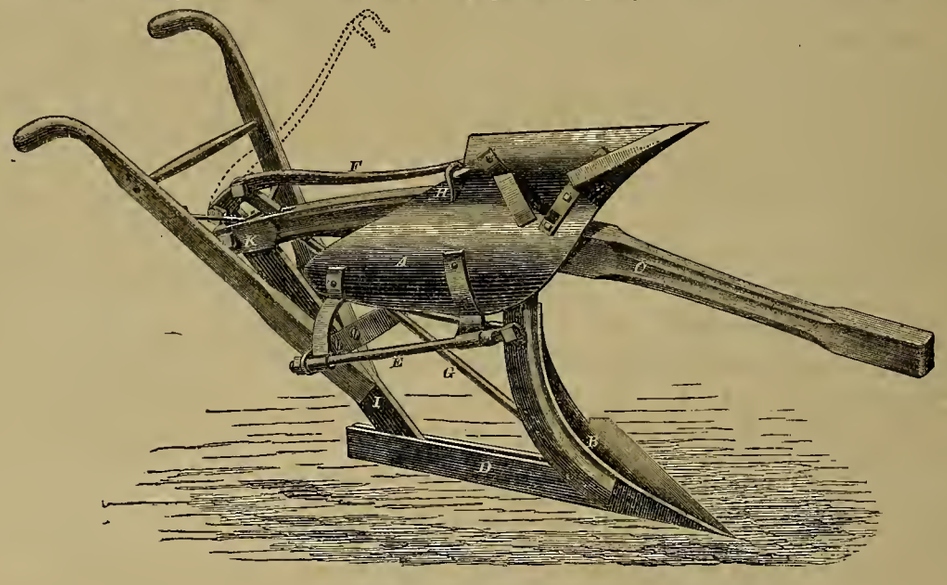
In the item of precious metals alone, her gain of imports over exports during January and February last, was not less than $6,800,000. Gold is the metal more generally retained; silver flowing out more freely. A favorable harvest, preventing the necessity for a large importation of breadstuffs, and a continuance of peace, added to other advantages, will give an immense increase to the national wealth of France, during the present year.

"OUR CHICAGO FRIENDS" appear to be having a good time generally. After being dined and wined *ad libitum*, in the city, and having seen all the great sights of the metropolis, they have gone to view the wonders of Yosemite and measure the "Big Trees." Some of our principal mine owners are making arrangements, on their return, to take them out and show them how we dig gold from our placers and pound out silver from the rocks. Our fruits and flowers have astonished them, while they have looked with amazement upon our broad wheat fields, waving with crops which are yielding forty, sixty, and even ninety bushels to the acre. It is well that the material wealth of our State should thus be seen and understood by our visitors. A new and increased enthusiasm will thereby be awakened in our behalf, and a more just and enlightened appreciation of the advantages which California presents for industrious laborers, will thus be disseminated among friends at the East.

CALIFORNIA WHEAT AT THE EAST.—California wheat is becoming more and more appreciated by Eastern millers, who now find it almost indispensable to mix with Eastern wheat in making their high grades of flour.

Scoville's Improved Side-Hill Plow.

Any improvement in machinery for tilling the soil and putting it in a fit condition to yield to the husbandman an increased quantity and quality of the necessaries of life, is important and profitable. This is especially the case where the invention accomplishes a certain kind of work with greater ease and more economically than other machines of the same class. A great portion of our State is of an uneven or hilly character, and these hills are covered with a very rich and productive soil. To cultivate them, a different arrangement and construction of the machinery from that used on the level or prairie lands, is necessary. The illustration herewith given represents an improved construction of side-hill or right and left-hand plows, invented by Messrs. Ives and Hiram H. Scoville, of Oakland.



SCOVILLE'S IMPROVED SIDE-HILL PLOW.

The advantages claimed for this plow over others employed for similar work, consist, first, in its being so constructed that the plow which is not in use is thrown up in such a manner as to rest its weight upon the beam, as shown in the engraving, where the plow, A, is firmly held by the hooks upon the end of the iron arm, F. The weight of the upturned plow is thus made to aid in keeping the opposite plow to its work in the ground, while the balance of weight is so equally divided as not to give an excess on one side. Its position is also such that it does not in any way interfere with the plowing, and the person who holds the plow can see to handle it as readily as though the mold-board was not resting upon the beam.

Second.—The handles of the plow, instead of reaching their ground support separately, are brought together and attached to the opposite sides of a metal bar, I, which rests on and is firmly secured to the heel of the land-side, D, and the end of the plow-beam at K. This arrangement gives to the plowman a much surer and easier control over the plow than when the handles are secured in the usual manner. The rod, G, is operated by the arm or lever, F, so as to lock the plow to be used in its proper position in the standard, by entering a slot in the toe of the land-side, D.

When it is desirable to use a single plow (as on level ground), either of the mold-boards may be quickly removed by loosening the nut, *m*, and removing the rod, E, thus converting it into a single plow. The mold-boards are hung upon two angularly-placed axles, one of which, belonging to the plow not in use, is shown at E, with its mode of attachment to the axis. The plow may also be used double, as for ditching, etc., by slipping a cap over the point of both plows when in proper position.

It is claimed that this is fully twenty per cent. easier of draft than most plows, by reason of the advantages already enumerated, added to the great acuteness of sheer. Its weight is 105 pounds; cost, $35. A manufactory for this plow has been established at Oakland Point, where it may be seen and any further information obtained. They may also be seen at Dorlman & Wolf's, corner of Clay and Drumm streets, San Francisco.

This plow has been successfully introduced, the following parties among others already having them in use: J. J. Reed, Marin county; A. F. Scott, Centerville; Geo. W. Shade, Watsonville; Jas. McCormick, Pescadero, and J. Wood, J. B. Gilchrist and J. B. Jones, of Spanishtown, San Mateo county. The inventors are ingenious and practical men, as has been evinced by several other important and useful inventions which they have already given to the public. A patent for this plow was obtained about two months since through the Patent Agency of this office.

THE MOON'S INFLUENCE.—Mr. Coffin, in his late book, "Our New Way Round the World," while writing of India, says: "The moon is at the full, pouring its rays from the zenith straight down upon us, with a power which is almost as unbearable as that of the sun at midday. There is no heat in its rays, but they have great effect upon the brain. The blood rushes to the head, and there is a sense of fullness and pressure which, although not attended by acute pain, is exceedingly unpleasant. We find it necessary to keep our umbrellas spread at midnight as well as at midday. It is dangerous to sleep in the moonlight in the tropics." Mr. Coffin fortifies his presumption of the supposed influence of the moon by the following quotation from the Psalmist:—"The sun shall not smite them by day, nor the moon by night."

BALLOON FRAMES.—A "balloon frame" is one which has few or no mortises. The studs are sawed off square, placed upon the sills, and several nails "toed in," to hold the stud in place, instead of holding it by mortise and tenon. The upper ends of the studs are secured to the plate in the same manner. This mode of building is very generally adopted in California, by reason of its comparative cheapness. A great saving is thus made, and when properly done, a house is nearly or quite as strong as when put up in the more expensive manner, by mortise and tenon.

PARKER'S BREECH-LOADER, noticed in the last number of the PRESS, may be seen at the Meriden Britannia Co's show-rooms, on the northeast corner of Sansome and Pine streets.

Familiar Science.

Tea—Why Old People Crave It.

The solid material or tissue of the body is constantly being worn out and wasted by labor. That which is thus worn out passes off mainly through the lungs and kidneys. The food introduced into the stomach supplies the material which, by digestion and assimilation, renews this waste.

Tea and coffee, and several other plants as well, contain a minute proportion from two to three per cent. of a peculiar substance known as theine. This substance, when taken into the stomach, has the remarkable effect of sensibly diminishing the quantity of this waste of bodily tissue. In middle-aged people, if this waste be thus diminished, less food will be required to sustain bodily vigor; hence it stands in the place of food—to a certain extent *saves* food.

With the old and infirm, however, it serves another purpose. With them the stomach is unable to digest a sufficient quantity of food to make good this waste. The consequence is a falling away of bodily proportions. Old people, no matter how corpulent they may have been in their younger days, are generally thin and spare from this cause. It is at this juncture that tea comes in as a *medicine* to *arrest* the natural and increasing waste of tissue; but not as a food to *replace* it. Hence tea is an especial favorite with the aged and infirm, whose powers of digestion have become so weakened that their bodily substance and stature are beginning to fail.

Effects of an Overdose of Theine.

Whatever may be said of the other properties of tea or coffee, the theine which they contain is perfectly innocent of harm when taken into the system in small quantities—as from one or two ordinary cups of tea or coffee. Three or four grains, which may be extracted from half an ounce of tea, may be swallowed by an adult without any unpleasant effects. Old teas contain more than those which are new. The Chinese, without understanding the philosophy, but fully distinguishing the effects between old tea and new, never drink tea until it is a year old. The unpleasant effects of an overdose of theine are, a quiet pulse, stronger heart-beat, general trembling, an excited imagination, which may even reach to a seeing of visions, and a peculiar state of intoxication, followed by deep sleep, during which all these symptoms pass off.

How to Obtain Theine—Its Composition.

Place some dry and finely-powdered tea leaves in a watch glass and cover the same with a conical cap of white paper; then place the glass on a hot iron. After a while a white vapor will be observed to rise, which will condense in minute colorless crystals on the inner surface of the paper cover. These are crystals of theine. When obtained from coffee they are almost identical in composition, and are known as caffeine. Another way is to evaporate to dryness a strong decoction of tea or coffee, and treat the dry powder so obtained in the same manner as the powdered tea. Green teas generally contain the largest amount of the substance, which is colorless, without smell and of a slightly bitter taste. Its composition is as follows:

Carbon	49.80
Hydrogen	5.08
Nitrogen	28.83
Oxygen	16.29
Total	100.00

The chief peculiarity of its composition consists in the large amount of nitrogen which it contains—a proportion contained in but very few other known organisms.

Boy's Steel Test.—The boyish test of good steel or good tempered steel blades, made by breathing on the polished surface, and noting the time of the evporation, has lately been claimed by a prominent English mechanic to be founded on correct principles.

How to Read a Gas Metre.

It is the privilege of every gas consumer to know, for himself, just how much gas he is consuming, and a few minutes practice will enable any one to "read the metre" readily; while such knowledge, besides affording a wonderful degree of satisfaction to the possessor, often brings about a much better feeling between the consumer and seller of gas. The N. Y. Gas Light *Journal*, furnishes the following plain and simple directions for acquiring such knowledge: The metres in ordinary use have three indices. The hand on the first or right hand index moves to the right as the figures read, and each index begins at a cypher (0) at the top and reads, 1 to 2 to 3 and so on to the cypher again, which is 10. When the hand on the right index has moved to 1 it indicates that 100 cubic feet of gas have been used or passed the metre; when it points to 5 it means 500 feet, and after completing the circuit at (0) it is 1000 feet. Each of the indices are ten fold multipliers of the one preceding. Single figures are used for want of room, but the multiplier is generally placed above the index; thus the right hand is "one thousand," the next to the left or middle index is "ten thousand," and the last or left hand index is "one hundred thousand." Therefore on the first or right hand index, 1 on the dial stands for 100; in the middle index 1 stands for 1000; and one on the right hand index stands for 10,000 and so in this ratio with the succeeding figures respectively.

To read the metre, begin with the left index and write down the figure last passed by the pointer; then write down the figures last passed on the second index, and proceed in like manner with the third or right hand index. Now add two cyphers (00) and it will give the amount of gas registered in cubic feet. Suppose the first index was 2, the second index 5, and the third index 6, making 256, now add two cyphers and you will have 25,600, being the amount of gas used at that time.

At the end of the month (or at any other time) read the metre again and the figures will read—say 26,500 after adding the cyphers; now deduct the first sum from the last and you will have the difference 900, which indicates the number of feet used since the previous reading.

Flour—Good and Bad.

To grind wheat into flour with the greatest advantage, the millstone should make about sixty revolutions a minute; if run faster, the stones heat and thereby injure the flour; if slower, the flour adheres to the bran, so that it cannot be properly separated in the process of bolting.

Flour, when kept too long in an ordinary atmosphere, loses an undue portion of its moisture, and acquires a disagreeable taste. When such flour is made into dough it absorbs a larger amount of water than is consistent with the production of good bread, although it looks whiter and smoother. Bakers often use old flour for the reason that the bread looks better and weighs more to a given amount of flour, from the fact that it absorbs and retains through the process of baking, more water than new flour.

Experiments have shown that 3½ lbs. of flour, kept one year in a dry place, absorbs two pounds of water in being converted into dough, and lose ten ounces in the process of baking. This result, however, varies with flour of different qualities.

Flour that has been damaged by being heated in grinding, does not mix thoroughly with water in being converted into dough. To remedy this trouble bakers sometimes dissolve a small quantity of alum in the water.

When chalk, lime, bone-ash, etc., has been mixed with flour, as these things sometimes are, the adulteration may be detected by carefully burning the flour in a crucible. The flour will disappear, while any calcareous or silicious mixture will remain.

Carbolic Acid, it is stated, can be deodorized. Two parts by weight of gum camphor are mixed with one part of crystallized carbolic acid. After this compound has been well rubbed together, it is mixed with whiting, and in that form is said to be a valuable disinfectant and a good protection to furs in summer.

Uses of Marrow.—The French Academy of Sciences has received an interesting communication from Dr. Neuman, on the physiological action of marrow in the animal economy. In his opinion this substance contained in bones plays an important part in the production of blood, and red cellulee are constantly being formed in it. He remarks that when the elements of the red marrow of bones are examined in the human frame and in that of the rabbit, one always finds red blood cells, each containing a nucleus, clearly distinguishable, by their yellowish hue, from other cells resembling corpuscles of lymph. Some of the former have a simple nucleus; others contain one divided in several parts; and in some the nucleus seems to have disappeared altogether. Dr. N. thinks that the cells of marrow resembling those of lymph are an element from which new red blood cells are being constantly formed, in order to replace the elements of the blood which are being constantly destroyed, either by physiological or by pathological action.

Increase of Temperature in Depth.

The increasing ratio of the temperature of mines as they descend was investigated a second time by Mr. R. W. Fox. His observations will be found condensed in the appended table. Amongst other curious incidents contained in Mr. Fox's report, may be mentioned the following: The Levant copper and tin mine, near the sea, is 255 fathoms deep, and nearly 230 fathoms below the sea level, under which it is horizontally extended in slate rock. The temperature near the end of this level was found to be 84.7° on one side and 85.5° on the other; the drainage water 85.5° and the air 85°. In 1853, the temperature of the rock in this level when it was not extended so far westward under the sea, was reported to have been 87°, and the granite rock at the same level eastward of the shaft, 74°. The engine house of the Botallock copper and tin mine is built on a rock washed by the sea. The western levels of this mine are extended more than half a mile under the Atlantic. At a level 180 fathoms under the sea level, the rock near the end of the level was 79° on one side and 79.5° on the other, the air being 81°.

Mines.	Depths in Feet.	Dates.	Temperatures.	Increase of 1° in Descent.	Rocks.
Par Consols (tin in part)	768	1837	74° —50=24°	32 feet	Slate.
Botallock (copper and tin)	1,128	1837	79° —50=29°	39 feet	Slate.
Par Consols (copper in part)	1,248	1837	84° —50=34°	36.7 feet	Slate.
Dolcoath (copper and tin)	1,380	1822	75.5° —50=25.5°	54 feet	Granite.
Swant (copper and tin)	1,530	1853	74° —50=24°	63.7 feet	Granite.
Dolcoath (copper and tin)	1,530	1853	87° —50=37°	41.3 feet	Slate.
Swant (copper and tin)	1,530	1857	85° —50=35°	43.7 feet	Slate.
Trisavern (copper)	1,672	1857	82.5° —50=32.5°	48.4 feet	Granite.
Dolcoath (copper and tin)	1,632	1857	73° —50=23°	71 feet	Granite.
Dolcoath (another lode)	1,632	1857	79° —50=29°	55.3 feet	Granite.
Tresavean (copper)	2,112	1853	90.5° —50=40.5°	52.1 feet	Granite.

Humboldt estimated 100 feet vertical to 1° of temperature, above ground.

The Southern Railroad.—Nearly all the Southern Railroads borrowed money at the North before the war, and the obligations therefore were confiscated and collected by the Confederacy. Since the restoration of peace, the northern creditors have called for their dues, and the roads are holden for them. That's what's the matter with the Southern Railroads, and the reason why their stock is so nearly worthless.

The English Patent Laws.

The English journals are full of discussions upon the above named subject. A resolution was recently debated in the House of Commons, which proposed to abolished the patent laws entirely. It met with so much opposition that it was subsequently withdrawn; but although many members objected to the extreme course proposed, the majority were in favor of an entire remodeling of the patent system. No wonder. It is time. The system is a disgrace to a civilized nation. An English patent is a perfect marvel of long-winded and elaborate vagueness. No specific "claim" being required, as with us, the "specification" does duty, in its place; and the consequence is, that the maker of said specification lays himself out to cover all the ground within his reach. He revels in circumlocution; he allows the diarrhœa of words to flow unchecked; he leaves his reader, or whomsoever it may concern, in the desired state of confused doubt at the end, as to what he really does claim as his invention; and he provides a hundred ingenious chances for future litigation,—of any one of which he can avail himself, in case it should hereafter appear to be worth his while.

There seems to be a wish, on the part of the thinking ones, to adopt the American patent system. They are fully aware of the abuses current and possible under their own, and it is probable that the present agitation of the subject will result in such adoption, so far as is consistent with English pride. The two principal journals among those especially interested in patent matters, *The Engineer* and *Engineering*, take a sensible view of the subject. The first says:

"An examination of the arguments brought forward in the debate of last Friday shows that all the objections to patents fall under two main heads—the careless and ignorant way in which they are granted, and the careless and ignorant way in which patent cases are judged in our courts of law. It is complained elsewhere than in the House of Commons that patents are granted for frivolous and insufficient inventions, or for no inventions at all; that notoriously old things are continually being repatented; that the descriptions are insufficient, and that the laxity of the law favors fishing and fighting patents; that the descriptions and drawings are insufficient and inaccurate. All these objections are perfectly true, but they apply not to the principle, but to the administration of the law. Let there be a preliminary examination, as in America, with respect to at least novelty; let not merely drawings, but also models, be required from the patentee; let additional facilities be given for ascertaining the novelty, or the amount of novelty, in a patent; let each patentee again, as in America, be required strictly to define his claims; let every patent agent be subjected to examination and be liable to disbarring, instead of, as now, allowing ignorant boys or swindlers to practice. There are people now practicing in London and elsewhere as patent agents who do not even know the English language; who scarcely know a pump bolt from a cow's tail, and who have not the slightest idea of the laws, whether of patents, of mechanics, or of common honesty."

Engineering says: "In nearly all cases there is really nothing but a necessarily meagre "provisional specification," to examine a document unaccompanied by drawings, and from which even an expert could hardly be expected to form more than a rough general notion of what the invention really was. Once in a great while a patentee deposits a complete specification at the start, but even this is but seldom examined with any other purpose than the possible detection of clerical errors. It is upon a wretched and unexamined provisional specification that the inventor receives the Great Seal, and all the privileges of a patent; after which he files his complete specification, which may contain almost anything he likes, so long as it can be made to tally, generally, with the terms of the provisional specification. Thus, men who deliberately patent contrivances of no value for the purpose of tripping up others, have every possible encouragement."

Mechanical Progress.

For Foundrymen.

Mr. J. Anderson, C. E., Supt. of machinery to the War Department, recently lectured before the Loudon Society of Arts, upon "Applied Mechanics." In the conrso of the lectnro, he took occasion to spoak in high terms of the American fonndrymen. He said that they studied crystallization, the molecular structure of motals, and other subjocts bearing npon their art. The direction of crystallization in cast iron, when cooliug, "is detormined by the lines into space which the heat takes;" and consequontly if we introduce into castings irregularity of figuro, or anything which creatos currouts outwards in various directions, we introduce lines of weakness. The rato at which the heat is hastened out of the casting, must also bo regarded. Whero great hardness is required, rapid cooling is necessary; but whero ductility is wanted, as in a gun, the hoat is allowed to go out slowly. The Amorican cast-iron guns stand well, for both tho points above referred to are regarded iu the casting. Every part of a casting should cool, too, at the samo rate. The parts which from their loss substance, would cool first, must bo kept hot by oovering with fire or somo other means. The Americans nre more careful, too, than tho English, in regard to the allowing gas to form within the mold. Mr. Babbit uses old firebricks, which have long been in use, for his molds. Those which are at all discolored are rejected; the others are ground up, and mixed with pipe-clay to secnre ndhesiveness. When used, the mold is heated red hot, and in that stato receives the molten metal. Not a particle of gas is generated.

Corrosion of Boilers.

An article upon this snbject hy Norman Wheeler in *Van Nostrand's Magazine*, takes the ground that the corrosion of boilers worked in connection with surface condensers,—geuerally attributed to galvanio action induced by the condenser,—is dne rather to the chemiccl changes that take place, and is consequeutly the cause, instead of the effect, of whatever galvanic action is noticeable. As a proof of his position, he instances the following case, which occurred in his practice in 1864:

"Four vessels wero built for the Government, with return flne hoilers and "high pressure" engines, but the steam was condensed, for the sake of fresh feed water, in open surface condensers; the steam spaces in the condensers communicating with the atmosphere through pipes. The condenser tubes were made of iron and galvanized, for the purpose of avoiding the corrosion of the boilers. The feedwater was drawn by the feed-pumps directly from the condensers. As a matter of conveuience, the ntmospheric pipes were led from the condensers snd opened into the smoke pipes, so that when an exhaust took place, the vapor was for an instant driven out through the atmosphorio pipe, nnd hecsuse of the continuous condensation, the gases in the smoke pipe were drawn back toward or into the condenser between the successive exhausts, thus keeping up a pulsation and swaying baok and forth of vapor and gases in the atmospheric pipes, which, although made of copper, were eaten into holes in a few days. The pipes passed overhead through the fire rooms, and the continual dripping of hot water made those places very uncomfortable. The corrosion of the boilers was marked and unmistakable within a month.

The atmospheric pipes were theu changed and led to the open air, and the corrosion of both boilers and pipes apparently ceased.

It is supposed that carbonic acid was absorbed rapidly by the vapor nnd condensed water in the atmospheric pipes, the supply being dcrived from the gases of combustion, nnd the acidulated water passed into the boilers by the feed-pumps.

Now, it it bo proven that the water, while exposed in the hot well of an ordinary engine, absorbs oxygen and separates it from the nitrogen of the air, nnd that the nascent carbon of the oils, used to luhricate the intornal parts of the engine, is seized by the oxygen whcu tho oils are decomposed by tho heat of the steam, wo shall bo able to account for an amount of carbonic acid iu the boilers working in connection with common surfaco condensers, sufficiont to destroy them rapidly."

PULVERIZED COAL AS FUEL.—Mr. Thos. R. Crampton has been experimeuting upon a furnaco which shall secure, as nearly as possible, complete and instantaneous combustion of fuol. At present, from one-half to three-fourths of the coal burned is *wasted*. The ooal is reduced to powder by means of ordinary mill-stones, after having first passed through a crusher. A blast of nir passes between the mill-stones, keeping thom cool, and carrying away the fiuo dust as fast as produced. A kind of injoctor, formed of a conical pipo or nozzle, receives the powdered dust as it is fod from a hopper. Within the first nozzle is a smaller one through which a blast of air is forced. Instead of introducing tho mixed air and coal dust directly into tho chamber, where the heat is to bo utilized, it is forced through n long chamber with baffling screens, to give time for the combustion to become complete before the hot gases, thus produced, are brought to the point where the heat is required.

FAC-SIMILE TELEGRAPHING.—Meyer's apparntus for telegraphing, employed in the French service, does not give merely a copy of the message sent, but n *fac-simile;* so that telegrsphic dispatches present, as regards exactitude and authenticity, all the guaranties found in postal communications. The Ahbe Caselli's *fac-simile* of messages, reproduced by chemical processes, presented serious imperfections, which often rendered the deciphering of the message diffioult, giving rise to doubts as to the authenticity of the writing. M. Meyer has avoided these difficulties by mechanical means.

TESTS OF TURBINES.—A scientific test of wheels of this kind is now going on at Lowell, Mass. A number of scientifio men are present, and many wheel builders from different sections of the country. Hiram F. Mills, C. E., of Boston, superintends the experiments, in proparation for which several thousand dollars was expended. The different wheels are tested in reference to velocity of discharge, number of revolutions, temperature of the water, variations of head and resistance,—and everything carefully noted.

PULLEYS COVERED WITH LEATHER.—Van Nostrand translstcs from *Polyt Centralblatt* an article on this subject. The objections to the various methods which have been tried for preventing the slipping of bands upon pulleys, are recounted; and the covering of the pulley with leather declared to be free from all of them. The leather is fixed by a kind of cement which adheres firmly to both iron and leather.

BELT FOR A OIVEN HORSE-POWER.—F. W. Bacon gives this rule for proportioning the belt to drive a given horse-power: "Multiply the horse-power required to be transmitted through the belt by 36,000. Divide the product by the nnmber of feet, or parts of a foot the belt is to run per minute; divide the quotient by the number of feet or parts of a foot in length of that part of the belt in contact with the smaller pulley; divide the last quotient by 6, and the result will be the width of the belt in inches."

IMPERIAL GREEN.—This new pigment, of French invention, is the sesquioxide of chromium. It is brilliant, cheap, and not poisonous. The inventor starts with a solution of ony salt of chromium, which he boils with appropriate reagents to obtain the green modification; to this he adds either gelatinous alumina or recently precipitated hydrated oxide, carbonate or sulphide of zinc, in just sufficient quantity to saturate the acid. The reaction takes place quickly, but may be accelerated by heat. The precipitate has only to be washed and dried, and is ready for use.

Scientific Progress.

Experiments upon Sounding Flames.

A. Weinhold, of Chomnitz, recommends a very simple contrivance, to ohtaiu flames of great sensitiveness to tones or noise, with ease and certainty. A pressure of at least an inch and two-tenths of water is necessary to the production of a sensitive flame, and as this cannot nlways he had, a gasometer can be contrived out of a bell jar suspended by a cord running over n pulley with a scalo pan nttached to the end for weights, with which to rogulate the pressure. The bell jar can be dippod into n large vessel, and filled with gas by syphon. A three gallon jar will furnish sufficient gas for more than a minute, and can easily be replenished. Weinhold recommends certain precantions:

"The flow of gas must be through capacious tubes so that the pressure can not be diminished near the burner. A half-inch tube is necessary if the pressure does not exceed one nnd a quarter inches. The india-rubber tubes must also be capacious. The gas where it flows out must not make the least noise. Such an effect is sometimes produced by the roughness in the sides of old tubes or imperfection in the stop cocks. The burner must be a simple hole with a wide opening, a sharp angle and smooth sidos. Glass tubes drawn out to five-hundredths of an inch in diameter serve a good purpose. A cyliudrical piece of soap-stone serves better than glass, as it is not liable to crack. The best results are obtained with n burner the inner diameter of which at the point of ignition is 0.08 of an inch, and in n length of one inch widens to two-tenths of an inch. Such a burner consumes 19 cubic feet of gas per hour, and gives the flame 19 to 23 inches in length. At every noise the flame shortens and divides itself into two distinctly separable parts—the lower, cylindrical, quiet—the upper, wide, illuminating and rustling.

By uttering hissing consonants, the flame is shortened one-half: OO in deep tones has no effect; A and Ae act powerfully. The rustling of tearing of a piece of paper, the striking together of two pieces of glass, the ring of a bundle of keys, the ticking of a watch, all produce a marked drawing together of the flame. A shrill whistle causes the flame to assume a swallow-tail shape."

Geology of Texas.

The London Geological Society has just republished, in English, Herr Roessler's sketch of the geology of Texss. We condense as follows: Texss offers a complete series of deposits from Palæozoic Potsdam Sandstone up to the highest Tertiaries. A bed of bituminous coal is known to exist near Fort Belknap. The Carboniferous formation has been stated to extend over 5,000 square miles of surface, and to be 350 feet in thickness. The thickness of the Cretaceous deposits probably exceods 1,500 feet; they are distinctly stratified, generally fossiliferous, coralline limestones, particularly well developed in the Comanche summit, 650 feet above the level of the Rio Brazos, where they appear under the form of white hippurite limestones, overlying a bed of gray limestones, whose strata extend about 70 yards westward and form a low slope; they are filled to the depth of 30 feet with organic remains. The Tertiaries consist of sandstones and limestones. Remains of *Zeuglodon cetoides* have been found in the hill-range of the Rio Colorado, and bones of *Mastodon giganteus* and *Elephas primigenius* on the Rio Brazos. The calcareous sandstones and dolomitic limestones in the western region, are rich in silica, and furnish marbles of superior quality.

The Azoic rocks include extensive beds of magnetic iron ore. Enormous masses are spread over the snrface about Johnson's creek; a hill, rising 45 feet above the level of the river Llano, is one solid mass of iron ore; its depth is unknown. The ores, analogous to those of the Iron Mountain of Missouri, nre partly magnetic, partly specular oxide of iron; they contain on an average 96.890 per cent of per- and protoxide of iron, with 2.818 per cent of insoluble siliceous substances, nnd give 74.93 per cent of metallic iron. This iron regiou is surrounded by ridges of granite, intersected by veins of quartz. Wood abounds in the environs.

Superficial indications of the existence of great quantities of petroleum helow the surface are not nufrequent in the environs of the "Four Lakes" (Harding county). This locality belongs to the Miocene period, forming a zone 50-75 miles in breadth and extending several hundred miles in length along the coast.

RATIONALE OF DOUBLE REFRACTION.—Prof. Tyndsll, in a recent lecture at the Royal Institution, reported in *The Engineer*, said that in air, water, and well-annealed glass, tho luminiferous ether has the same elasticity in all directions. There is nothing in the molecular grouping of these suhstances to interfore with the perfect homogeneity of the ether. But when water crystallizes to ice, the case is different; here the molecules are constrained by their proper forces to arrange themselves in a certain determinste manner. Thoy are, for example, closer together in some directions than in others. This arrangement of the molecnles carries along with it an arrangemeut of the surrounding ether, which causes it to possess different degrees of clasticity in different directions. In a plate of ice, for example, the elasticity of the ether in a direction perpendicular to the surface of freezing is different from its elasticity in a direction parallel to the same surface. This difference is displayed iu n peculiarly striking manner by Iceland spar, which is crystallized carbouste of lime; and in consequence of the existence of these two different olasticities, a wave of light passing through the spar is divided into two; the one rapid, corresponding to the greater elssticity, and the other slow, corresponding to the lesser elasticity. Where the velocity is greatest, the refraction is least; and where the velocity is least the refraction is greatest. Hence in Iceland spar, as we have two moving waves with different velocities, we have double refraction. This is also true of the greater number of crystalline hodies. If the grouping of the molecules be not in all directions alike, the ether will not be in all directions equally elastic, nnd double refraction will infallibly result. When a beam of light passes through ice perpendicular to the surface of freezing, or through Iceland spar parallel to the crystallographic axis, there is no double refraction.

THE INFLAMING POINT OF VAPORS.—Mr. Hutton, of Glssgow, has recently made experiments to determine the degree of heat at which the vapors of various explosives take fire from a burning candle at a given distance. The *Gas-Light Journal* prints a table showing the result in rogard to a number of substsnces, and adds in comment: "The crude nsphtha of the specific grsvity of nearly 0.89, contained considerable portions of tarry substance and naphthaline, but it nevertheless took fire at a lower degree of hest than refined nsphtha, the specific weight of which did not exceed 0.86. That a liquid which contains but a small amount of a very volstile fluid msy he dangerous, is seen, for instance in the experiment with the light oil from coal tar. This oil inflames from the light of a candle at 119° Fah. when approached within a distance of one and a half inches. When compared with the great inflammability of hisulphide of carbon or benzole, the tar oil may be considered as of little danger, but it is just as dangerous when it is taken into considerstion that the great inflammability of bisulphide of carbon is well known, while the tar oil is looked upon as heing comparatively harmless. In the preceding case, the liquid portion, which generated inflsmmable gases at 119° Fah., did not amount to two per cent. of the whole, and after their sepsration, vapors were not given off below 179.5° Fah."

EXPLOSION OF METEORITES.—The *Journal of the Franklin Institute* translates tho following from *Les Mondes:*

"M. Swaim proposed before the Academy of Sciences the following explanation of the detonating explosion of meteorites. It has been proved that usually the aërolites which reach the sphere of the earth's attraction, contain a large proportion of hydrogen. Is it not then probable that in their passage through the atmosphere, they also absorb a large amount of oxygen or air, so that the mixture of the two gases beoomes explosive, and in fact explodes when the temperature either from resistance or the friction of the air becomes of sufficient intensity?"

COLD PRODUOED BY A GALVANIO COUPLE.

M. Favre has communicated a paper to the French Academy, in which he points out the fact that certain galvanic couples, instead of giving out heat, nctually absorb it, and thus produce cold. Such a couple is one composed of platinum and cadmium, the exciting liquid being hydrofluoric acid.

Farming and Gardening.

The Flower Garden.

Numerous bouquets of California flowers have been sent to the East since the opening of railroad communication. Of course such houquets must he composed of rosehuds and such other flowers as do not perish readily. A common way of sending them ie to gather and pack them in a box with cotton, which has been eaturated with water. Press them down a little, but not too tightly, and perforate the box with eeveral small holee, eo that there may be a little circulation of air. Bouquets so eent East arrive in ahout as good a coudition as when taken from the bushes. Rosehuds so arriving, if gathered into a bouquet and placed in water, will soon open with heautiful full-hlown roses, as perfect as if they had been left on the hush. So we have been told.

The Germans, in fader-land, we have seen it stated, have a method of keeping rosehuds freeh iuto winter, which consists in first covering the end of the stem, as soon as cut from the bush, with borax, and then placing each hud in a paper cap or cone, so that the leaves do not touch the paper. The cap is then coated with glue, to exclude air and dust, and when dry it is carefully placed in a standing position in a cool place, hut secure from hard frost.

When wanted for use, the bud is taken out of the envelope, the waxed end cut off, and the stem placed in water, when the rose will soon appear in full bloom.

Watering Plants in Summer.

It is not wise, says an exchange, to hegin to water plants unless it is intended to follow it up thoroughly. If plants are watered but sparsely, they throw out their little roots near the surface in order to drink in the moisture; and if afterwards the watering he neglected, these little fibrous roots perish for lack of moisture and the plant suffers. When they are not watered at all, the little roots go down deeper in eearch of moisture; and in well cultivated soil, in good condition, they will usually find enough to keep them from suffering, unless the drouth continues unusually long. If it seem necessary to give water, it should be copiously and in quantity sufficient to go down to the hottom of the roots; a sprinkling that wets the surface is worse than none. Syringing the leaves to wash off the dust, if done in the evening after the sun is down, will improve the appearance and health of plants.

Water for this purpose, however, should never be ueed directly from a well or water pipes. It should he first pumped up or drawn off into a barrel or other reservoir. Water much colder than the atmosphere exerts a chilling influence upon plants, which is highly injurious. On the other hand, water tbat is warmer than the atmosphere has a most wonderful effect over that which is oolder, in exciting the growth and vigor of plants. It is astonishing to ohserve how very *hot* water may be advantageously used for sprinkling upon plants.

Look out for the Insects.

We have elsewhere, in the present issue, oautioned our farmers to look out for the insects injurious to wbeat. The weeds, too, must be more carefully watcbed, from this time out, than they have been heretofore. We have already, iu previous numbers, alluded to this matter, naming the weeds whioh are threatening damage hy their pestiferous character or multiplication. All these things come as the result of cultivation. Like the birds and house vermin, they always follow close upou the heels of civilization, and they need our constant and watchful care lest they get the advantage of us. A correspondent of the Santa Cruz *Times* enumerates some of these field pests which have not heen hefore alluded to iu the columns of the *Mining and Scientific Press*. We copy as follows:

I notice in a late number of your paper a paragraph headed "Those Thistles." If you mean a large coarse thistle with smooth and shining leaves, spotted green and white, and with pink flowers, we have it here also, and you do well to call the attention of everyhody to the great necessity of eradicating it as soon as possihle. It is from the south of Europe, and no one can tell how it got here. It was first noticed hy hotanists in this country at Knight's Ferry, in the interior of this State. Its hotanical name is *Silybum Marianum*. It has no American name that I know of, except the "Spotted Thistle." It is a great nuisance.

Another plant, quite as noxioue, is the Maltese thistle, *Centaurea Militesusis*, from island of Malta. This is short, thorny all over, very stiff, and with small yellow or pink colored flowers. It grows among the grain crops, and is very hard to cut, bind or thresh. It was first introduced at Monterey, I believe from a French ship, and is spreading rapidly over the country.

A third is worse, if possible, than either of the others mentioned. It is the thorny clothurr, *Xanthium Spinosum*; a stout epreading plant, with many short thorns, and the burs are seed pods covered with hooked prickles, worse for sheep aud their wool, than the common clot-hurr; hesides heing a large, bushy plant that takes up a great deal of ground.

Anotber introduced weed, that is very ahundant in the Pajaro hottom lands, hut which is, perhaps, not so much of a pest as some of the others, is a sort of *wild radish*. *Raphanus raphanistrum*, with large pods.

It would he of vast benefit to the State if these could all he exterminated; but in a new and thinly settled country like ours, it would now be almost impossihle to prevent them from growing and spreading.

Only Forty Bushels.—According to the Castroville *Argus*, the sandy hills in that region, where the land is rented for only one dollar an acre, are yielding a full average of twenty bushels of wheat—equal to the highest average of any State east of the Rocky Mountains. The *Argus* man met a friend, a few days ago, whose farm was located in the richer bottom lands of that region, and who was growling because his wbeat was turning out *only forty bushels to the acre!* This incident reveals the habit which the farmers in our rich bottom lands have got into of thinking very poorly of a crop which don't turn out 50, 60, or 70 bushels to the acre. Anything uuder fifty is a poor yield with them. What would the wheat growers on the hest lands of the "Great West" think of such yields?

The Harvest.—The grain speculators have been unable to make a "failure" out of the wheat crop. The *smut* and *rus* wouldn't stay; and the beaten-down grain would get up in spite of all that the subsidized press could say ahont it. There never has been snch a crop as is now being harvested; and the greatest trouhle now about the crop is to get men enough to gather it in, and transportation sufficient to take it to a market. It is thought hy some that the increase will be fully twenty-five per cent. over any previous crop. Those figures are prohahly too high. It will, at any rate, be sufficient to gladden the hearts of all concerned; and we trust its proceeds will result in well-filled pockets for the growers. A cotemporary very properly urges that more care should be taken by harvesters in cleaning and sacking their grain; for unless this is attended to more properly than heretofore, many farmers will find tbeir grain neglected hy shippers on account of its foul coudition.

Wheat Quotations for the Week.

New York telegrams of Monday quoted California wheat at $1.65@1.73. Yesterday it had advanced to $1.70@1.77.

Liverpool wheat quotations on Tuesday were 10s. 6d.; Wednesday, 10s. 4d. On Thursday they had advanced oue peuny, and again another penny on Friday—staudiug, as on Tuesday, at 10s. 6d.

Hongkong dates of June 19th quote California wheat at 2.40 per picul.

Salinas Valley.—It is said hy men who have traveled extensively through the State, that the crops in the Salinas Valley excel any portion of the State.

Wheat Insects in California.

Very little damage has bitherto been suffered on this coast, from the ravages of any of the various insects which interfere with the production of wheat. But unless the utmost precautions are employed, such inscets *will* come, and tbeir advent will be attended with great loss to the farmer. It would appear from the following, which we clip from the *Pajaronian*, that one of the most distrnctive of the wheat insects has already made its appearance in the neigbborhood of Watsonville, Santa Cruz County. That paper of tbe 15th instant says:

Mr. Knapp, of this place, brougbt into town yesterday, a hunch of wheat which partly solves the problem of the light wheat crop of this year. Iu the joint of many of the stalks were curious little worms, which some call the "Hessian Fly," and is the same insect that some yeare ago greatly injured the wheat crop in Pennsylvania and the Eastern States. Farmers with whom we have conversed seem to be doubtful ahout there heing rust enough to injure the grain, and many have said that the reason of the partial hlight was incomprehensihle to them. Probahly if farmers will examine closely the stalks of wheat they can find the prohlem solved by the presence of this strange insect.

An Insect at the Root.—A gentleman of Alameda County informs the editor of the Castroville *Argus* that "the wheat fields where the crop is light, are infested hy a small insect that attacks the *roots* of the plant, cutting them off. He was led by noticing the seeming absence of cause where heads were light to pull up the stalks and examine the roots, which he found to be cut off, and eaten by the little destroyers, who were present in great numbers. The effect of this destruction of roots is the absence of kernels in two of the six rows of the heade, and a blanching of head and stalk, so that the infested fields present a epotted appearance, the healthy grain heing of a golden color with heavy drooping head, the other of a pale whitish hue, with the heads erect. The ravages of the iusect is confined to no particular locality, but is apparent in patches amidst the finest crops.

The only difference seems to he between the fields plowed early and those plowed late, the former heing almost entirely free of them; another argument in favor of small farms, that can be properly cultivated."

The closing paragraph, quoted above, contains a most significant hint, whicb it would be well for farmers, everywhere, to consider most carefully. Good cultivation is the great preventive of almost all the trouhles and pests that meet the farmer in the field. We cannot have healthy plants, with imperfect culture; and it is seldom that healthy plants are attacked either by insects or *fungi*. We doubt if smut or rust ever attacked a perfectly healthy field of wheat. Tbe Hessian fly seeks ont a dieeased stalk in which to deposit its eggs, from which come the "curious little worms," mentioned by the ahove correspondent of the *Pajaronian*. The "late plowed land" is that wherein tbe plant roots are attacked in Alameda County. When a wheat field is plowed and sown late, in this country, there is not, as a general thing, sufficient moisture present to properly germinate the seed. The heat will find an easy access to the seed, and as easy escape from it. The consequence is, if the seed germinates at all, it seuds up a weak and feehle stalk, which never can produce a healthy kernel; and which holds out a oonstant and standing invitation for the attacks of the various *fungi* and insects to wbose assaults it may be subject.

We propose, at an early day, to give an illustrated description of the difference hetween the proper and improper planting of wheat.

The wheat harvest is in progress, and tbe yield thus far exceeds the general anticipation of grain growers. Chinamen are heing extensively employed in the barvest fields. There appears to be no espeoial objection to their employment in that pursuit, as witbout them it would be almost or quite impossihle to save the crops.

Agricultural Items in Brief.

Old Hay.—A farmer at West Dover, Vt., has been feeding out hay that has heen in his harn for thirty-four years. It came out hright and sound, the cattle ate it well, and it was as good in every respect as hay grown laet snmmer.

Rivers Falling.—The Sacramento, Feather, San Joaquin, and Tuolumne rivers are rapidly falling, and farmere will do well to hurry up their grain and send it to market quickly.

Peas.—There are over 2,000 varieties of peas, hut only seventy or eigbty that are considered truly valuahle.

Figs in Ohio.—A gentleman of Chillicothe, Ohio, has successfully cultivated figs in his garden for several years. He says that wherever the tomato can he grown, the fig will flourieh and matnre.

How to Increase the Corn Crop.—A Western writer eays if as much attention was paid to improving corn as is given to grapes, 100,000,000 busbels might he added to the annual crop.

The Rice Crop in the Southern States will exceed that of any season since the year 1860.

Cotton Seed.—Over 4,000 tons of cotton seed have heen consumed the past seasou in Cincinnati, in the manufacturo of oil.

Cruelty to Animals.—The most inhuman cruelty is habitually practiced in the transportation of animals by railroad. Fifty-four animals were lately found hy the meat inspector, dead in an air-tight car, at the Morris and Essex depot, in Newark, N. J.

Poisonous Clover.—Many cattle in Iowa have been killed by eating too freely of clover, wbich has become poisonous hy growing too rank since the recent heavy rains.

California Wool Product.—It is estimated that the wool production of California, this year, will amouut to ahout eighteen milliou pounds—9,000 tone.

Better than Gold Mining.—Ivy Bro's crop of harley, near Salinas City, has turned out sixty-three bushels to the acre. Mr. Withers, in the same neighhorhood, hae obtained an average of eighty-two bushels. Five bundred acres, farmed by Mr. Whitesides, have averaged over eighty bushels, and the adjoining land farmed hy Mr. Pomeroy, yielded ahout the same. The ahove are all upland crops, on the Suscol and Alisal ranchee, and have all been threshed out. The lowlands, where tbe crops are later, have not yet come in; but the yield expected from them is 115 bushels to the acre We glean the ahove from the Castroville *Argus;* and they are facts which muet astonish our Eastern readers.

Shipping Grain in Bulk.—An indispensable condition to the complete succees of the Vallejo elevator, will be the possibility of successfully shipping grain in bulk around Cape Horn. It is understood that this experiment will be thoroughly tested the present seasou. Every dollar saved in this manner will go to enrich the State; hence the result of this experiment will be looked for with much intereet.

Variety in Farming.—One of the consequences of the completion of the Pacific Railroad, will he the opening up of an immense demand for general agricultnral produce throughout all the country helow the Sierras and Rocky mountains. This new demand will tend to the introduction of a greater variety in the farming of California. Anything that will turn the attention of our farmers from wheat, and divide the risks of this industry, will be of great value to the State.

The Foot Hills.—Extensive experiments during the past few years have demonstrated that a large portion of the really very valuable laud in the State is to be found in the greatly neglected foot hills. The choice of the Japan Tea Company, the great success which has attended varions mountain vinyards, and several other like experiments, is fast changing public opinion in this regard.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, July 24, 1869.

Financial.

In the midst of an active demand for money, caused by the prosecution of improvements on an extensive scale, the requirement for funds to move the crops, the construction of new railroad facilities, and the large amount of unliquidated claims against interior dealers, the market is devoid of any tightness and works quite smoothly, considering the stringency prevailing for nearly three months. Rates, in bank, are 1@1¼, and outside, 1½@2 per cent. per month. Bullion is scarce and in demand; we quote gold bars at 870@880; silver bars remain at par; currency bills on Atlantic cities pay 33 per cent. premium on gold, a decline of 1½@1¾ per cent. since our last.

The Marysville Savings Bank opened for business on the 17th of April last, and on the 13th of July the following report was made: Amount of deposits received, $15,177 95; deposits withdrawn, $1,556 85; entrance fees received, $104; loans made, $13,850; loans returned, $500; interest received, $171 25; organizing and other expenses, $342; number of depositors, 52; borrowers, 9.

City Stocks.

In shares, other than mining, we note a very limited business. San Francisco Gas stock realized $83; Spring Valley Water, $63 75; and California Steam Navigation Co., 58 per cent. Of our Savings Institutions, the French society reports as due depositors on the 30th of June, $3,650,847; Savings and Loan, $5,053,543; Odd Fellows', $889,933; and California Building and Savings Bank, (on May 1st) $716,060. At the close, we note sales of North Beach and Mission Railroad at $70, and 20 shares of Omnibus Railroad at $70 per share; also $6,000 S. F. Bonds, 7s, at 89¼.

The returns of our local insurance companies to the Internal Revenue department for the month of June and previously this year have been as follows, upon a currency basis of 74 cents on the dollar for the month of January, 77½ cents for February and March, 75½ cents for April, 73½ cents for May, and 74½ cents for June:

	June.	Previously this year.	Total.
Pacific	$123,624	$492,657	$616,281
Union	32,224	225,758	257,982
Fireman's Fund	36,159	163,397	199,556
California	9,230	52,659	61,889
Merchants' Mutual Marine	27,232	131,534	158,766
Occidental	25,205	110,987	136,192
Home Mutual	15,453	66,797	82,250
Peoples'	20,355	77,596	97,951
Total	$289,482	$1,321,205	$1,610,687
Same time in 1868	167,031	826,624	993,655
Increase in 1869	$122,451	$494,581	$617,032

The above statement shows a decrease of $1,636 from the receipts in May. The receipts of the several companies in June as compared with May show the following difference:

	Increase.	Decrease.
Pacific	$14,491	.....
Union	.....	9,657
Fireman's Fund	.....	11,321
California	.....	218
Merchants' Mutual Marine	.....	1,142
Occidental	.....	377
Home Mutual	3,195	.....
People's	3,460	.....

The receipts of the city railroads for the month of June and previously this year were as follows:

	June.	Previously this year.	Total.
Omnibus	$28,558	$120,362	$145,920
North Beach & Mission	23,491	116,822	140,313
Central	17,093	79,887	96,980
Front Street, Mission & Ocean	9,615	44,686	54,301
Market Street	12,198	57,781	69,979
Potrero and Bay View	9,702	14,127	17,829
Totals	$91,655	$433,665	$525,320
Same time in 1868	86,952	378,823	465,775
Increase in 1869	$4,703	$54,842	$59,545

As compared with the total receipts in May, we find a decrease of $10,946. The receipts of June as against May show the following difference:

	Increase.	Decrease.
Omnibus	.....	$1,838.
North Beach and Mission	.....	3,343
Central	.....	2,069
Front Street, Mission and Ocean	.....	1,034
Market Street	.....	2,402
Potrero and Bay View	.....	652

Mining Share Market.

During the past week, the mining share market exhibited considerable activity, though prices of leading stocks show a decline under quite heavy sales; this may be remarked of Chollar-Potosi, Hale & Norcross, Ophir, Savage, and Yellow Jacket. Of White Pine stocks, the offerings are on the increase, as well in the sale of shares as in companies placed on the list.

GOULD & CURRY—was in the market to a limited extent, at a decline. For the week closing July 19th, 284 tons of ore were extracted, 323 delivered for reduction, and 256 tons remained on the dump at the mine. The shaft was cleared of water on the 18th, and work was resumed on the seventh station on the same day. The second station drift has been opend 500 feet, leaving 350 feet more to clear out.

HALE & NORCROSS—had a sharp fall, under quite large sales. The information regarding this claim is meagre. During the month of June, so far as reported, the hullion receipts aggregate $120,500, and with the returns in April and May, foot up $387,046 for the second quarter of the current year.

CHOLLAR-POTOSI—was largely dealt in since our previous reference, at a small recession, but at the close had partly recovered. A telegram of the 21st states that "the loss by the fire this morning is confined almost exclusively to the Company's buildings, and the lumber and timber, and will amount to considerably over $100,000; insured for $40,000. There was no pay ore being taken out of the shaft where the fire occurred; so there will be no interruption in the ore yield of the mine." During the week ending July 16th, 1,798 tons of ore were extracted, and 1,630 tons were forwarded to the mills for reduction. On the 20th inst., $23,303 in hullion was sent to the office in this city.

YELLOW JACKET—has also met with more activity, selling at a slight decline. In the absence of official data, we have estimated the bullion product of this Company, for the first six months of the current year, at $680,000. An assessment of $10 per share was levied on the 19th inst. At the recent annual election, John B. Winters was elected President; T. C. Taylor, Vice-President; Trustees—J. B. Winters, T. C. Taylor, William Sharon, D. Driscoll, and J. B. Storer. They voted $25,000 in aid of the sufferers by the late fire in this and adjoining mines.

OPHIR—sold to a considerable extent. On the 20th inst., the drift was 451 feet in length, and the material latterly passed through is represented to show traces of metal....IMPERIAL met with small sales. The retimbering of the shaft is progressing well; otherwise nothing special.

The annexed tabular statement of hullion receipts, assessments and dividends, together with the highest and lowest prices of the stock of the various Comstock claims, explains itself. The product of the Yellow Jacket and Occidental companies we have estimated:

COMPANY.	Highest Price.	Lowest Price.	Bullion.	Assessments.	Dividends.
APRIL.					
Alpha	$41 00	$21 75	$3,250		
Belcher	24 50	15 00			
Bullion	90 00	30 00			
Commercial	50 00	50 00			
Chollar-Potosi	250 00	171 00	122,583		
Crown Point					
Confidence			12,567		
Central					
Consolidated Virginia					
Daney					
Empire Mill & Mining Co					
Gould & Curry	280 00	150 00	16,400		
Gold Hill Q. M. & M. Co					
Hale & Norcross	150 00	110 00	4,982		
Kentuck	145 00	83 00	13,852		
Lady Bryan	83 00	42 50	1,428		
Ophir	280 00	245 00	18,428		
Occidental					
Overman	16 00	7 00			
Segregated Belcher	7 25	2 75			
Savage	63 00	25 00	30,000		
Sierra Nevada	90 00	50 00			
Yellow Jacket	210 00	90 00			
Total in 1869			$235,114	$34,000	$84,000
Total in 1868			1,582,857	31,600	252,000
Total in 1867			781,362	140,000	104,000
MAY.					
Alpha	$45 00	$30 00	$3,250		
Belcher	18 00	8 00			
Bullion	60 00	30 00			
Commercial	50 00	45 00			
Chollar-Potosi	422 50	285 00	131,353		
Crown Point					
Confidence					
Central					
Consolidated Virginia			14,618		
Daney					
Empire Mill & Mining Co					
Gould & Curry	129 00	90 00	42,953		
Gold Hill Q. M. & M. Co					
Hale & Norcross	111 00	74 00	5,691		
Kentuck	60 00	30 00	132,854		
Lady Bryan	57 50	30 00			
Ophir	238 00	160 00	42,958		
Occidental					
Overman	17 50	8 00			
Segregated Belcher	5 00	2 50			
Savage	30 00	15 00	30,516		
Sierra Nevada	60 00	40 00	23,000		
Yellow Jacket	285 00	150 00			
Total in 1869			$480,875	$219,600	$32,000
Total in 1868			889,640	202,400	80,000
Total in 1867			1,899,795	225,000	40,000
Total in 1866			852,569	44,800	160,000
JUNE.					
Alpha	$33 75	$20 50	$3,250		
Belcher	28 00	14 00			
Bullion	50 00	25 00			
Commercial	50 00	45 00			
Chollar-Potosi	470 00	265 00	175,750		
Crown Point					
Confidence					
Central					
Consolidated Virginia			15,526		
Daney					
Empire Mill & Mining Co			45,296		
Gould & Curry	120 00	58 00	24,358		
Gold Hill Q. M. & M. Co					
Hale & Norcross	76 00	50 00	12,574		
Kentuck	50 00	35 00			
Lady Bryan	40 00	25 00			
Ophir	245 00	145 00	24,358		
Occidental					
Overman	11 50	6 00			
Segregated Belcher	3 75	2 50			
Savage	50 00	30 00	30,000		
Sierra Nevada	76 00	36 00			
Yellow Jacket	265 00	150 00			
Total in 1869			$389,827	$91,655	$42,000
Total in 1868			858,191	86,952	
Total in 1867			1,433,858	153,300	
Total in 1866			1,000,854	25,500	30,000

We herewith present a condensed tabular statement relative to the bullion product, (so far as can be ascertained) dividends paid, and assessments levied by the various mines on the Comstock Lode during the first six months of 1869, together with the figures of previous like periods:

COMPANY.	Bullion Product.	Dividends.	Assessments.
Alpha			$30,000
Belcher	$8,280		83,200
Bullion			25,000
Crown Point	105,718		
Confidence	18,889		31,200
Chollar-Potosi	665,637	$42,000	
Central			4,500
Consolidated Virginia			17,400
Daney			48,000
Empire Mill & Mining Co.	93,914		
Gould & Curry	53,796		
Gold Hill Q. M. & M. Co.	34,345		10,000
Hale & Norcross	447,511	96,000	
Imperial	230,947		
Justice			15,000
Julia			5,000
Kentuck	243,772	40,000	20,000
Lady Bryan			
Occidental*	180,000	20,000	
Ophir			50,400
Overman	156,671		128,000
Segregated Belcher	4,830		
Savage	943,217	280,000	
Sierra Nevada	88,165	7,000	
Yellow Jacket*	680,000	360,000	
First 6 months, 1869	$3,955,701	$845,500	$467,700
" 1868	4,299,488	1,100,150	938,100
" 1867	7,064,653	2,068,200	440 680
" 1866	4,926,708	526,000	687,400

* Estimated.

THE MINING AND SCIENTIFIC PRESS, the only journal west of the Mississippi river devoted to mechanics, mining and the physical sciences, has just entered upon its nineteenth volume. It is the most valuable publication to California miners, inventors and scientists published on the coast, and another department has been added devoted to Agriculture, which will render it an excellent family paper for country folk. The PRESS is a very handsome 16-page sheet, ably edited, compilations and selections made with care, and contains all the latest discoveries of interest in the arts and sciences with finely engraved illustrations. Published at San Francisco by Dewey & Co., Patent Agents.—*Vallejo Chronicle.*

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alpha Cons, Storey co., Nev., June 5, $5	July 10	July 31
Blue Rose, White Pine, May 31, 5c	July 10	August 1
Bullion, Storey co., Nev. May 22, $10	Payable immediately	
Brodt, White Pine, June 23, 25c	July 29	Sept. 4
Central, Storey co., Nev., June 23, $2.50	July 24	Aug 14
Cosala, Mexico, June 19, $1.25	July 21	Aug. 12
Germania, White Pine, July 13, 25c	Aug. 13	Aug. 26
Cons. Chloride Flat, W. P., May 28, $1	July 7	July 29
Cherokee Flat, Butte co., June 28, $5	Aug. 8	Aug. 18
Chester, White Pine, June 29, 15c	Aug. 4	Aug. 25
Cuba Cons., White Pine, June 24, 8c	July 24	Aug. 10
Cayuga Chief, White Pine, June 23, 10c	July 30	Aug. 19
Cordillera, Mexico, July 23, $1	Aug. 24	Sept. 8*
Bucklin, White Pine, July 14, 5c	Aug. 20	Sept. 10
Bromide Flat, White Pine, July 12, 60c	Aug. 13	Sept 2
Daniel Webster, White Pine, June 30, 15c	July 30	Aug. 19*
Evening Star, White Pine, June 25, 10c	July 31	Aug. 21*
French, White Pine, July 19, 5c	Aug. 24	Sept. 13*
Gold Hill Q., Storey co., June 25, $1	Aug. 2	Aug. 23
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 30*
Hidden Treasure Cons., June 29, 50c	Aug. 4	Aug. 25
Hidden Treasure, White Pine, June 29, 50c	Aug. 4	Aug. 25
Hope Gravel, Nevada co, June 29, $1	Aug. 7	Aug. 23
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 21
IXL, Alpine co., May 10, $2.50	June 28	July 26*
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Lyon M. & M., El Dorado co., July 21, $2	Aug. 30	Sept. 20*
Kentuck, Storey co., Nev., June 14, $10	July 15	Aug. 3
Mazeppa, White Pine, June 30, 10c	Aug. 5	Sept. 11
Magenta, White Pine, June 24, 10c	July 29	Sept 4
Mahogany, White Pine, June 17, 10c	July 23	Aug. 13
Mammoth Cave, White Pine, July 12, 10c	Aug. 19	Sept. 23
Morning Star, Alpine co., July 21, $1.50	Aug. 31	Sept. 14*
Marlborough, White Pine, July 19, 5c	Aug. 24	Sept. 13*
Noonday, White Pine, June 14, 30c	July 19	Aug. 9
North Star, Nevada co., June 4, $20	July 9	July 30*
Ophir, Storey co. Nev., July 23, $3	Aug. 25	Sept. 16
Original, Sierra co., July 21, $5	Aug. 21	Sept. 6
Ploche, White Pine, April 6, 15c	June 30	July 30
Phœnix, White Pine, July 12, 15c	Aug. 12	Sept. 30
Rathbun, White Pine, June 22, $1	July 27	Aug. 14
Silver Moon, White Pine, May 31, 25c	July 10	August 1
Silver Wave, White Pine, June 7, 20c	July 8	July 28*
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug. 28
Silver Eagle, White Pine, July 14, 25c	Aug. 16	Sept. 6
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Aug. 30*
Virginia, White Pine, June 17, $1	July 28	Aug. 11
Virginia, No 2 White Pine, July 21, 25c	Aug. 26	Sept. 11
White Pine Water, June 23, $50	July 28	Aug. 16
Willimantic, White Pine, May 20, 20c	July 19	Aug. 10*
West California, White Pine, July 10, 10c	Aug. 17	Sept. 25
Yosemite, Humboldt co., Nev., July 2, 50c	Aug. 7	Aug. 24*
Yellow Jacket, Storey co	July 19, $10	Aug. 18 Sept. 17

MEETINGS TO BE HELD.

Alleghany, Sierra co.....Annual Meeting July 26
Bromide Tunnel, White Pine.....AnnualMeeting July 26
Chester, White Pine.....Annual Meeting July 30
Columbus, Placer co.....Annual Meeting Aug. 2
George Washington, White Pine...Annual Meeting July 23*
Golden Rule, Tuolumne co.....Annual Meeting July 27
Maxwell, White Pine.....Annual Meeting Aug. 4
Planet, Arizona.....Meeting July 28
Rathbun, White Pine.....Annual Meeting Aug. 2
San Fernando Tunnel, White Pine Annual Meeting Aug. 2*
Sedgely, White Pine.....Annual Meeting Aug. 2*
White Cloud, White Pine.....Annual Meeting Aug. 2*

LAST DIVIDEND.

Amador Co., div. $8 per share.....Payable July 3, 1869
Alpha Cons, Storey co., Nev, div. $2....Pay. June 19, 1868
Bacon, Storey co., Nev., div.....Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.....May 10, 1869
Crown Point, dividend, $7.50.....Payable July 13, 1868
Chollar Potosi, div., $20.....Payable July 7, 1869
Eureka, div. $5.....Payable July 10, 1869
Empire M. & M., Nev., dividend $6. ...Payable May 15, 1867
Gould & Curry, div. $7.50.....Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50....Payable July 13, 1868
Golden Charlot, Idaho, div. $3.....Payable June 15, 1869
Golden Rule, Tuolumne co, div. 50c ₰ sh., Pay. June 26, 1869
Hale & Norcross, div. $5.....Payable July 10, 1869
Imperial, Storey co., Nev., div.....Payable June 20, 1868
Industry, White Pine, div., $4.....Payable July 1, 1869
Keystone, Sierra co, div., $32.....Payable May 6, 1869
Kentuck, div., $20 per share.....Payable Jan. 10, 1869
North Star, dividend, $5.....Payable April 15, 1868
Occidental, div. $2.....Payable March 2, 1869
Pacific Unassessable, div.....Payable June 18, 1868
Sand Spring Salt, dividend $1.....Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2.50.....Payable Dec. 19, 1868
Savage, Virginia, Nev, dividend, $4...Payable May 3, 1869
Sand Springs Salt, Virginia, div., $1....Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. $2.50....Pay. July 10, 1869
Virginia & G. H. Water Co..Dividend, payable April 16, 1869
Yellow Jacket, div., $5.....Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this ournal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, July 23, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5-20s, 1865, '67, '68	$ —	—
United States Bonds, 5-20s, 1864	—	—
United States Bonds, 5-20s, 1862	87	88
Legal Tender Notes	73½	74
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par	& Int.
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par	& Int.
San Francisco City and Co. Sch'l Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds, 6s	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	—	58½
Spring Valley Water Co	—	64¾
State Telegraph Co	25	—
GAS COMPANIES.		
San Francisco Gas Co	84	84½
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
San Francisco and San Jose Railroad	—	—
Omnibus Railroad	—	70
Central Railroad	50	—
North Beach and Mission Railroad	—	70
Front Street, Mission and Ocean Railroad	11	12
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	150	160
INSURANCE COMPANIES.		
People's Insurance Company	90	95
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	130	—
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	89	91
MINING STOCKS—WASHOE DISTRICT.		
Alpha	23½	24
Baltimore American	—	—
Belcher	22½	23
Bullion, G. H.	17	17½
Crown Point	43	43½
Cole (Va.)	5	8
Confidence	85	45
Consolidated Virginia	6	10
Chollar-Potosi	24½	25
Daney	2¾	2¾
Exchequer	10	12
Empire Mill and Mining Co	50	60
Gould & Curry	105	110
Gold Hill Quartz	57½	60
Hale & Norcross	108	110
Imperial	59	60
Julia	1¾	2
Justice and Independent	7¾	8
Kentuck	160	170
Lady Bryan	36	38
American	21½	21¾
Occidental	19	—
Ophir	103¾	—
Overman	69	70
Segregated Belcher	9¾	10
Savage	79	79¾
Sierra Nevada	9¾	10
Union	—	—
United States	—	—
Yellow Jacket	63½	64
MISCELLANEOUS MINING STOCKS.		
Amador (California)	286	289
Aurora, White Pine	10	16¾
Eureka, (California)	214	—
Golden Charlot (Idaho)	36	40
Silver Cord (Idaho)	6	—
Golden Rule, California	—	—
Mohawk (California)	—	—
Pocotillo, White Pine	3½	4½

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, July 23, 1869.

Flour, Extra, ₰ bbl	$5 00 @ $5 50
Do. Superfine	4 50 @ 4 75
Corn Meal, ₰ 100 lbs	2 00 @ 2 25
Wheat, ₰ 100 lbs	1 40 @ 1 75
Oats, ₰ 100 lbs	1 50 @ 1 75
Barley, ₰ 100 lbs	1 15 @ 1 35
Beans, ₰ 100 lbs	3 50 @ 5 00
Potatoes, ₰ 100 lbs	75 @ 95
Hay, ₰ ton	10 00 @17 00
Live Oak Wood, ₰ cord	9 00 @14 00
Beef, extra, dressed, ₰ lb	7 @ 9
Beef, first quality, ₰ lb	2 50 @ 3 00
Hogs, on foot, ₰ lb	5 @ 7
Hogs, dressed, ₰ lb	9 @ 10
GROCERIES, ETC.	
Sugar, crushed, ₰ lb	14¼ @ 15
Do. China	10 @ 11
Coffee, Costa Rica, ₰ lb	— @ 24
Do. Rio	— @ 19
Tea, Japan, ₰ lb	75 @ 90
Do. Green	60 @ 1 25
Hawaiian Rice, ₰ lb	9¼ @ 10
China Rice, ₰ lb	5¾ @ 6¾
Coal Oil, ₰ gallon	45 @ 47½
Candles, ₰ lb	16 @ 18
Ranch Butter, ₰ lb	35 @ 42½
Isthmus Butter, ₰ lb	30 @ 35
Cheese, California, ₰ lb	15 @ 17
Eggs, ₰ dozen	42½ @ 62½
Lard, ₰ lb	16 @ 17
Ham and Bacon, ₰ lb	14 @ 16
Shoulders, ₰ lb	8 @ 9

Retail Prices.

Butter, California, fresh, ₰ lb	50 @ 60
do. pickled, ₰ lb	30 @ 40
do. Oregon, ₰ lb	25 @ 30
do. New York, ₰ lb	35 @ 40
Cheese, ₰ lb	20 @ 25
Honey, ₰ lb	25 @ 30
Eggs, ₰ dozen	50 @ 55
Lard, ₰ lb	18 @ 20
Hams and Bacon, ₰ lb	20 @ 25
Cranberries, ₰ gallon	1 00 @ 1 25
Potatoes, ₰ lb	1½ @ 2
Potatoes, Sweet, ₰ lb	— @ —
Tomatoes, ₰ lb	5 @ 10
Onions, ₰ lb	5 @ 8
Apples, No. 1, ₰ lb	4 @ 5
Pears, Table, ₰ lb	5 @ 6
Plums, dried, ₰ lb	10 @ 12
Peaches, dried, ₰ lb	10 @ 18
Oranges, ₰ dozen	50 @ 60
Lemons, ₰ dozen	— @ 1 00
Chickens, apiece	75 @ 1 00
Turkeys, ₰ lb	30 @ 35
Soap, Pale and C. C.	7 @ 12
Soap, Castile, ₰ lb	18 @ 20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, July 23, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₰ 100 lbs; Bar, 1@1¼c ₰ lb; Sheet, polished, 3c ₰ lb; common, 1½@1¾c ₰ lb; Plate, 1¼c ₰ lb; Pipe, 1¾c ₰ lb; Galvanized, 2¼c ₰ lb.

Scotch and English Pig Iron ₰ ton	$40 00 @ $42 50
White Pig ₰ ton	35 00 @ 36 00
Refined Bar, bad assortment, ₰ lb	— 03 @ —
Refined Bar, good assortment, ₰ lb	— 04 @ —
Boiler, No. 1 to 4	— 04¾ @ —
Plate, No. 5 to 9	— 04¾ @ —
Sheet, No. 10 to 13	— 04¾ @ — 5
Sheet, No. 14 to 20	— 05 @ — 5¾
Sheet, No. 24 to 27	— 05 @ — 6¾

COPPER.—Duty: Sheathing, 3½c ₰ lb; Pig and Bar, 2½c ₰ lb

Sheathing, ₰ lb	— @ — 26
Sheathing, Yellow	— 20 @ — 21
Sheathing, Old Yellow	— 10 @ — 11
Composition Nails	— 21 @ — 22
Composition Bolts	— 21 @ — 22

TIN PLATES.—Duty: 25 ₰ cent. ad valorem.

Plates, Charcoal, IX, ₰ box	12 00 @ — —
Plates, I C Charcoal	10 00 @ 10 50
Roofing Plates	10 00 @ 10 50
Banca Tin, Slabs, ₰ lb	— @ — 35

STEEL.—English Cast Steel, ₰ lb — @ — 15

QUICKSILVER.—₰ lb — @ — 55

LEAD.—Pig, ₰ lb — @ — 8

Sheet	— 10 @ — —
Pipe	— 11 @ — —
Bar	— 9 @ — 9

ZINC.—Sheets, ₰ lb — @ — 11

BORAX.—California, ₰ lb — @ — 40

"TO BE WEAK IS TO BE MISERABLE."—No matter by what cause the physical energies may have been impaired—whether the frame has been debilitated by over-exertion, or anxiety, or excess—DRAKE'S PLANTATION BITTERS will restore the staminal vigor of the system when all the prescriptions of the pharmacopœia have utterly failed. This is a great medical fact, resting upon volumes of published testimony, and it cannot be controverted. Remember that decay is progressive—that chronic debility, unless checked by proper treatment, increases from day to day, and inevitably shortens life. Change the condition of the vital organization with this powerful vegetable alterative—it imparts motive power to the inert animal machinery; bracing up the nerves, the body servants of the brain, and endowing the stomach with the healthful activity requisite to convert the daily food into a life-sustaining element. "To be weak is to be miserable," says Milton. The blind poet was right. ***

THE best place to get every different variety of spectacles to be found in the market is at C. Muller's, 205 Montgomery street, near Bush. ***

AMERICA ON HER TRAVELS.—It is estimated that there are not less than 300,000 Americans making the tour of Europe, or temporarily sojourning there.

CONTINENTAL Life Insurance Company, 302 Montgomery street, corner of Pine. *

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Leviathan.—*Miner*, July 10th: We learn from Mr. Wolf, foreman, that permanent operations will commence next Monday. The movement is eustained by London capital, and it is believed there will be no "let up" until the mine is thoronghly developed.

Imperial looks enconraging....M. C. M. Will soon be ahle to treat ores of low grade with profit, it is thonght....Globe still in quartoze rock with water coming in.

Barnes' Claim.—*Chronicle*, Jnly 10th: This—the Old Billy Rodgers' Claim—is promising. The shaft is down 135 feet, at which depth a drift is heing run across the ledge. They are in fifteen feet. The ore looks well, and Barnes has in contemplation the erection of a mill.

Morning Star.—Supt. Gamble is taking out ore, and getting along finely. George H. Ensign, the new President, will come from San Francisco next week to examine the mine.

MARIPOSA COUNTY.

Hite's Mill and Mine.—Correspondence of the *Mail*, July 16th: Hite's Cove is 22 miles from Mariposa. The new mill is thought to he ahove any high water that may come. Twenty stamps are grinding on an average 15 tons every 24 honrs. Four of Knox's pans amalgamate the free gold; then follow two tanks for amalgam and snlphurets; thence the pulp passes into "Eureka" pans, where it is reground; then into a large settler. Blankets are the last means nsed helow everything else for saving the sulphnrets. The remaining sands are heaped up with salt and exposed to the weather for several months. A regrinding then secures nearly all the gold. The last assay of these sands showed $548 per ton.

NEVADA COUNTY.

Grass Valley.—*Union*, 14th: The Enreka yesterday had gold bricks which weighed altogether, 1,160 onnces, and were sent below.

From New York hill there has heen a crushing of 23 loads which yielded about $500 in coin. Ben. Macauley's mill did this last.

The Idaho mine, for a two weeks run, sent below yesterday morning, bricks valued at $14,000.

Blasting Experiments.—Same of 18th, Yesterday, at the Empire, some experiments were tried in hlasting with the qnality of gunpowder, knowu as rifle powder. This was put np in cartridges and rammed down in the holc made by a three-qnarter inch drill, and threw out the rock well. The experiments will he continned. An agent of one of the powder companies of San Francisco, is conducting the experiments. We nnderstand that gun cotton, of improved manufacture, will soon arrive here from Europe, and will he tested in our mines.

Banner Mine.—*National*, July 13th: We learn that this mine started this morning on the old hasis, with black powder and double-handed drills.

Call for Machinery.—The fact that prospecting is active is proved by the fact that there is a great demand for second-hand machinery for hoisting purposes.

Eureka.—This nine had a clean-up Saturday, after a run of ten days, which yielded $22,300. The bricks, which weighed 1,260 ounces, were sent down to San Francisco yesterday.

New York Hill.—At Ben. Macauley's mill, 23 loads of rock from New York Hill have just been crushed, paying over $22 per load.

Idaho Mine.—This mine, after a rnn of two weeks with fifteen stamps, has had a clean-up of $14,000.

Wm Penn.—Same of 15th: The shaft in this mine is snuk to the depth of 160 feet. About 25 fcet more remains to be sunk under the present contract. The rock heing taken out is of such excellent quality that it pays all the expenses of sinking. The ledge is large and well defined.

Combination.—This mine, on the south side of Wolf Creek, has been worked in former years. A tunnel has been run in 150 ft. A contract was let yesterday to continue the same. About 75 ft. more will stril e the ledge.

Steep Hollow.—D. O. Wight, several years ago, run a bed rock tunnel for a gravel channel at the upper end of Steep Hollow. Recently he gave one-fonrth of his ground to Johu F. Coe, who contracted to run 50 ft. for such iuterest. On the 4th of Jnly Coe raised up two feet at the head of the tunnel and strnck gravel which yielded a dollar to the pan. From half a car load that was taken ont, $18 was realized.

At the Cascades.—16th: The Burrington Hill Mining Co. have heen washing during the season and are doing first rate. They are now cleaning np and will he at it several weeks. So far the returns are good.

Mining Patent.—The Allison Ranch Co. are applying for a patent to their mine.

Mines at Eureka.—The Forest Rose Co. have been running for their ledge for some time, and have every prospect of striking it shortly. They have recently struck a large stringer, the rock from which is rich in free gold.

The Jim Crack or Erie commenced work on Monday, Mr. Veatch having the charge. He intends taking out 200 tons of rock to he worked at Black & Young's mill.

The Birchville mine has heen paying regnlar monthly dividends since December. Their 5-stamp mill is kept running, and the yield of the rock is excellent.

Banner.—*Gazette*, 14th: There was a rumor yesterday that the Banner Company had discharged all their hands, and hired again those who strnck some weeks ago against the giant powder. A gentleman who was at the mine last evening tells us there is no truth in the report.

PLUMAS COUNTY.

Argentina, Again.—Qninicy *National*, July 10th: Last week we stated that we helieved this to be the richest in the State. During the week we have visited the locality. The company have run an open cut into the vein, about 40 feet deep. The rock is yellowish, not mnch harder than clay, with small seams of scraggy quartz here and there. The gold is not so much in the quartz as in the seams and rock around it. The mine is now demonstrated to be 1,000 feet in length, with a breadth of 200 or 300 feet, and in every part of it fine gold can he seen. The company have quit slnicing, believing that they were wasting more gold than they were saving. Killey & Archer have run a cut into the same vein, 600 feet from Heath & Co's, where the mine looks the same and pays as well.

Rich Gulch.—The scarcity of water has been a drawhack. Those who had water have done well. Capt. Corser's claim, with a small head of water, has averaged for the last three months, $8 per day to the hand. McNeely & Co. have a rich claim, but have not had sufficient water to make any headway. At 12-Mile Bar none of the companies have cleaned up yet. Their claims are looking well.

Sawpit Flat.—The miners have abont finished cleaning up. Their claims have generally paid.

SIERRA COUNTY.

Quartz Discovery.—*Messenger*, July 17th: A gold hearing ledge has heen discovered in the neighborhood of Port Wine, and abont 200 ft. located. The croppings assay $22 per ton.

Rumored Sold.—It is rumored that the Kanaka Quartz mine has heen sold to a company of capitalists who will open and develop it.

Iron Mine.—A qnantity of ore from the San Sahra irou mines near Gold Lake, has been sent below to be tested.

SISKIYOU COUNTY.

Joint Stock Company.—Yreka *Union*, July 17th: We understaud that Mr. James Trimhle and others of Oro Fino and vicinity, are taking steps to form a joint stock company for quartz mining. Trimble & Co. owu a valuable quartz ledge, on which they are erecting a mill. They propose to form a company, with $50,000 stock, divided into 1,000 shares; to work this and other ledges in the vicinity.

Mining at Oro Fino.—All mining at Oro Fino has been suspended for the seasou, on account of the failure of water. But little will be done there again before next February or March.

TRINITY COUNTY.

Cox's Bar.—*Journal*, 17th: Sid. Cnne has sold his mining claim and ditch to William Wilshire and William McElvany. Amos T. Smith has leased his claims, water and rauch, to Thos. Cox, for three years.

The New Diggings.—McCollum & Co. are doing well on Franklin (Sawmill) creek, findiug gold in pieces from one to three dollars. Thos. Price has been getting from $5 to $21 to the pan. He picked up on the hedrock $100 in oue day, in pieces of two, four and five dollars.

Stewart's Fork Ditch.—A party of men who have heen examining the ground, report favorably, aud state that the line is located upou good ditching ground, aud that there need not be more than one-half mile of flume. We are informed that parties now in town will perhaps proceed to organize a company to build this ditch.

Arizona.

Independence Lode.—Prescott *Miner*, July 3d: A. L. Molitor has shown us some rock from the Independence which will pay at least $30 or $40 per ton in free gold.

Walker's District.—The creek and tribntary gulches heing almost dry, placer miners can do nothing until water comes.

Lower Lynx Creek.—The Bashford Co's ten men are hard at work upon their ditches, etc. Jackson, Lovejoy & Co. are fixing np.

Hassayampa.—Yonng & Scott, in the cañon helow the month of Copper creek, did not find very good pay. Stone & Vincent worked a har above the cañon, and we have heen told averaged $10 a day each.

Sterling.—Work is progressing. It is helieved that the new mill will he completed in a month.

Chase.—Work will soon he resnmed. Recent letters from Paul to Noyes point ont the canse of failure of the new process at the first trial.

Wickenburg.—A recent letter states that the new battery of Reese & Krause worked defectively....A man has arrived from the new diggings near Walnut Grove, having in his possession several hundred dollars which he dug out there....The Vulture mill was running.

Colorado.

Briggs Mine.—Central City *Herald*, Jnne 3d: Mr. Beech deposited at Warren, Hussey & Co's bank to-day a retort which weighed 404 ozs. 11 dwt., worth $9.000. It is the product of three weeks' run on the poorest ore in the Briggs mine. Thirty-five tons of ore, worth $100 per ton, have been selected for Prof. Hill, which makes the gross product of the mine for three weeks $12,500. The work has been interrupted during the past month by break downs and repairing.

We saw a chunk of gold this evening which weighed 23 ounces 5 dwt., which came from one cord of ore taken from a new discovery in Peck Gulch.

Pewabic.—One cord of surface qnartz from Perrin's claim on the Pewahic lode, run in Bradley's new mill, Russell Gulch, yielded 43 ounces gold, worth $23 per ounce, or $989 currency.

Gold Shipments.—Same, July 12th: The shipments made by the three bankers of Central City from January 1st to July 1st, 1869—a period of six months—at currency valuation, amount to $863,000. For the same time last year, $752,000. Increase, about $110,000. The shipment for June is less than it wonld have heen hut for the trouble about water in the mines. This will probahly not interfere with the working of the mines during the succeeding months of the year. We therefore anticipate a much larger increase in the amount of gold produced for the last half of this year than the above figures show for the first. We give nothing in this report but accurate figures, and therefore leave ont the shipmente of silver and Prof. Hill's shipment, which we may put down at $150,000 for the six months.

Oro City.—Denver *News*, July 14th: Mining operations going on smoothly. The owners of the Pilot lode last week began working the decomposed ore by the puddling process. The first cord and a half yielded 42 ounces of gold. The mine looks as well as ever. Capt. McCannon is still prospecting his new diggings, and although he has not yet reached "bed rock," he thinks his prospects are good.

Central City.—*Register:* Three and a half cords of ore from the Jones lode, Nevada, jnst run, yielded $1,761.86. One cord of galena ore from the same lode yielded under stamps 13 ounces gold bullion. This is something rare, as galena seldom yields gold.

Idaho.

Silver City *Wave*, July 13th: The Cosmos mill will start up on Silver Cord ore about Thursday morning.

The brick mentioned by us as the product of two tons of Sherman ore in Flint, weighing 452 onuces, assayed $9.36 iu gold and $528.64 in silver—$538—being $269 per ton.

Bed Rock Mining Project.—Idaho City *World*, July 15th: The meeting held in this city in connection with the project to sink a shaft to bed rock to test whether it will pay to mine, has led to fair success. Through the exertion of the Finance Committee about $1,000 has been contribnted, and it is estimated that the work will cost $2,500. A stock company has heen orgauized to prosecute the enterprise.

Bullion.—From Mr. DuRell, Manager of the Agency iu this city of the First National Bank of Idaho, we learn that the treasnre shipment to New York for June summed up $112,448.88 currency. We may he sure that the amounts forwarded to San Francisco by Wells, Fargo & Co., Greathouse Bros., and private hands, would swell the total shipment to fully half a million dollars. Boise Basin is still rich in gold.

Montana.

Phillipsburgh.—*New Northwest*, July 9th: The Hot Spring Co. strnck the main ledge Thursday, and are now sinking a 5x10 foot shaft through it. An assay just made showed over $1,100 per ton—picked rock, however. Purvine, Ulery, Dennan and Heal, have snceeeded in turning Flint Creek from its channel through a ditch ten feet wide and three deep. Keep & Bear are making preparations to sink on the Salmon lode—will commence on Monday. The St. Lonis Co. announce their intention of starting np the mill abont the first of August, and will run it as a custom mill. They already have about 300 tons of beautifnl ore from their own mine on hand.

Boulder.—There is a general scarcity of water in Boulder as well as everwhere else. Work is suspended at Alta Gulch, and claims laid over till May 1st, 1870. At the Old Humhug diggings, ten miles above, one pipe and several ground sluices are still running.

Blackfoot.—Our correspondent informs us that there is only 300 inches of water in Tiger and Ohio ditches. Not over 100 men mining at Blackfoot and Carpenter'e Bar. Some rich ground has been struck at the head of Prairie gulch, and near Washington Gulch, but no details are given.

Highland.—Prof. Swallow is now on the leads of the Highland Gold Co., and intends to start up the mill soon. The arastras are ruuning on Only Chance rock and are cleaning np about $1,000 per week.

Nevada.

COPE DISTRICT.

Elko *Independent*, July 14th: A Monntain City correspondent, an experienced miner, writes us, 10th: "The mines of this district are richer than the most sanguine anticipated. The ledges are looking finely, and the ore improves in quality as depth is attained. The richness of the mines is now estahlished heyond a doubt, and no fears are entertained of their permanency, as the ledges are found to be regular and well defined. Several discoveries have been made, among which may be mentioned the Hamilton, a vein of very rich ore full two feet wide."

Rich Ores from Cope.—We received last evening, from friends in Mountain City, specimens of ore from the Blue Bell, Fuller, Estella, Mammoth and Great Eastern mines, which compare favorably with the best ores of the richest silver mines in the State. Some of the specimens contain native silver.

More Ore from Cope.—Same of 17th: On Thursday, Col. Drew arrived with a lot of ore, which he intends to ship by rail for reduction. This ore is from the California, and when its yield is made public, it will effectually stop croakers.

Cedar Pass.—New discoveries in the vicinity of Cedar Pass are attracting attention. The ledges are large and well-defined, ranging from 5 to 20 fcet. Samples of the croppings have been assayed in this town which yielded $53 per ton in silver and $3 per ton in gold.

Col. Frank Drew has shown the *Territorial Enterprise* the result of the working of three tons of ore from the Magenta. It went $9.30 in gold and $470.60 in silver. The Col. started hack to Cope last evening.

Excitement.—A telegram, dated Elko, 20th, is as follows: "Parties are leaving daily for Cope, taking with them tools, provisions, etc., for the purpose of locating and developing. One lot of rock from the Argenta mine, assayed at this place, showed $2,900 to the ton. Another from the California assayed $2,700."

HUMBOLDT.

Unionville.—Grass Valley *National*, July 16th: Mr. J. D. Jennings, who is largely interested in mining in Unionville, Nevada, is now on a visit to Grass Valley to purchase machinery. He gives a flattering account of a numher of silver ledges, including one owned by J. C. Fall, the Stewart, Alpha, and the National series. Rock from the Fall ledge prospects from $20 to $4,000 per ton. Near Star City excellent gold diggings have been discovered, and miners are making from $15 to $20 per day to the hand.

Quit Work.—Elko *Independent*, 14th: A correspondent writiug from Unionville, Tuesday, says: "Fall has just returned from San Francisco, and ordered that miners shall work ten hours, instead of nine. This the miners refuse to do, and have

quit work. Stewart, of the Silver Mining Co., has gone to the mines to get his men to add an hour to their labors. This move is made by the mine owners in order to introduce Chinese, as they know the miners will not work ten hours. They can say white men will not work for them, and they are compelled to employ coolies. The whole move was put up with this in view. I am of the opinion that this will prove a very warm climate for Chinamen yet."

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

PROSPECTS.—Gold Hill *News*, July 16th: The principal cause of the depression in mining stocks is the condition of the Crown Point, Kentuck and Yellow Jacket mines, owing to the still-existing fire. No ore is produceable from the Crown Point, and comparatively little from the Kentuck. The Yellow Jacket is improving, owing to the increased circulation of air, but in those three mines hundreds of men are thrown out of employment, and the production of ore is absolutely nothing to what it used to be. Looking ahead, say four months, we can see a vast improvement.

YELLOW JACKET.—July 17th: More men at work, and 200 tons extracted daily. Nothing new in Crown Point or Kentuck, except that measures are being taken to work the lower portion beneath the fire, through the 900-foot level of the Yellow Jacket.

HALE & NORCROSS.—Lower level looks as well as ever. Yield is over 100 tons daily. South drift develops a fine streak of ore five or six feet wide, assaying nearly $60 per ton.

GOULD & CURRY.—Shaft repaired—water out by to-morrow. Upper levels yield 50 tons daily, assaying $50 per ton.

SIERRA NEVADA.—First clean-up for the month made yesterday—comes up to the average. Everything prosperous.

SAVAGE.—Nothing new. Receipts $20,000 *less* than two millions, and disbursements, including dividend, $35,000 *over* two millions. Cash on hand July 1st, $47,000.

CHOLLAR-POTOSI.—Yields 250 tons daily, mostly from the Blue Wing. Profits of the year, $236,000. Cash on hand June 1st, $168,000.

VIRGINIA CONSOLIDATED.—New shaft 136 feet deep to-day.

IMPERIAL-EMPIRE.—Upper levels still yield ore, but will be worked out in a few months. Extensive repairs required. Assessment of $5.

YELLOW JACKET NORTH WORKS.—*Enterprise*, 15th: The repairs to the shaft are not yet concluded; therefore the hoisting of that 300 feet of water has not commenced. The big tubs and all the apparatus for discharging the same are in readiness. The building itself is being altered to suit, and the aspect of everything is materially changing.

CHOLLAR-POTOSI.—The shares in this company have been increased to ten times their former number, so that the present quotation of the stock at $30 per share or thereabouts, is just equivalent to the former one of $300.

VIRGINIA TELEGRAMS.—19th: The bullion shipment by Wells, Fargo & Co., on the 17th, was eight bars, 559 pounds, valued at $11,505.37½; by Pacific Union, twelve bars, valued at $10,704.85. Total, $22,210.22.

There are rumors of a strike in one or more of our mines, but I am unable to trace the rumor to a reliable source.

The Yellow Jacket Co. voted $2,500 for the sufferers by the fire in their mines, and levied an assessment of $10 per share to cover it and other expenses growing out of it.

Delinquent stock in the Kentuck mine will be sold August 3d.

WHITE PINE.

THE STRIKE.—The *News* thinks the reduction of wages was an unkind move for the Eberhardt to make, because it could better afford than any other company to pay the old price. In its issue of the 12th, it says: "Our own theory is, that the reduction of wages is a job put up to bear White Pine in the stock market. Eberhardt is not in the market—the fortunate owners have none to sell—but has come to be regarded as the representative mine, the others to be more or less affected by its reputation. To get the word abroad that the Eberhardt has put down wages of workmen because the rock will not pay, is to put Hidden Treasure, Pocotillo, Chloride Flat, and the other stocks, down."

Some of the leading mines are still idle. Others have reduced their working force. The contract system,—says the Mining Review of the *News* for the week ending 17th,—will probably supersede that of wages altogether. The Eberhardt has let a contract to have 20 tons of ore extracted per day. Several other companies have also let contracts; and in some cases the pay will amount to less than $4 per day to the miners. The mines look more promising than ever. The *News* advises all those who have the blues, owing to the new break, to go and look at them. We quote: "The Empire and Grattan shipping their first bullion to-day; the Evening Star Consolidated, Blair and Banner State, Excelsior, Sam Slick, and others, sending their first ore to mill; the Star and Stewart, Old Ned, Guardian, Paris, Chester, Hemlock, Olive, Oswego and others, piling up their first-found ore and enlarging their dumps to receive it; then take a glance at the ore breasts of the Consolidated Chloride, the two Auroras, Pogonip and Othello; go down into the Mazeppa and see the glittering wealth there; examine the great masses of rich chloride, and horn silver in the Original Hidden Treasure, and for the pure stuff see the little Posthole; go look at the rich mass of ore recently unearthed in the Pocotillo, the mountain of chloride bored by the tunnel, shafts and drifts of the Virginia, the fine ledge struck by the Noonday, 90 feet down, and a hundred other recent developments which promise returns for well-directed labor and capital. White Pine promised well four months ago—its inestimable wealth is now in sight, and tangible."

BULLION.—We have no returns of bullion shipped for Saturday and Sunday last, nor for yesterday, and therefore foot up the four intervening days at $46,701.23, being $13,597.96 less than the shipment of last week.

MILLS AND SMELTING WORKS.—John Tregloan has gone to Forest Hill, Placer County, Cal., to pack up and ship for White Pine a 10-stamp mill, of which he is part owner there.....The Treasure mill (Big Smoky) is being changed to a dry crusher. Will be completed by Thursday.....Mosheimer's Smelting Works will be in full blast this week....*Telegram* of 16th says: Logan & Co's mill at Swansea will commence active operations on Monday next.

OUTSIDE DISTRICTS.—The *Telegram* has seen some ore from Reveille district which is covered with horn silver. An average specimen assayed $2,900 per ton....Twelve or 15 men are at work in Tem Piute.... Accounts from Patterson are cheering. Mills are wanted. The *Empire* of 17th hears of men who have returned from there with large samples of excellent ore, which will run into the $400 to the ton, who are desirous to give half of two good ledges and 400 tons of ore on the dump, to any capitalist who will erect a mill in the vicinity of their claims. A Mr. Garnish is negotiating for a mill near Austin, to be removed to Patterson district. Three more loads of the machinery for Martin & Davidson's mill, also for Patterson, are expected to arrive to-day from Elko. A ten-stamp mill for Patterson has already passed through Hamilton.....Highland is a new district 150 miles south of Treasure City. Material is on the way,—says the *News* of the 17th,—for furnaces to be constructed there.

ITEMS.—*News*, 12th: The Excelsior had a ton and a half of ore crushed on Saturday which yielded $102 per ton.....13th: Workmen in the Boohinger slate quarry, on Union street, struck quartz below the slate yesterday afternoon, containing rich chloride ore.....On Mount Ophir the Buena Vista has shipped ore to mill, that went $1,222 to the ton. The Caroline has tracked chloride 1,000 feet, all the way. Several other claims have got fine ore.....14th: Rich strike in Pogonip and Othello, north shaft.... 15th: Pocotillo has 40 tons first-class ore on the dump.....16th: The Ophir beyond Babylon, on the Base Metal Range, is developing finely.....Edward Applegarth, of the Eberhardt, has purchased the Mazeppa mine entire, and will start work in it on Monday, with three 8-hour shifts of miners.....*Empire*, 15th: Argument in the case of the Aurora Consolidated and Earl closed last night. Decision reserved until Monday....*Telegram*, 12th: Southern Slope tunnel is now 80 feet in length. Indications good for metal in 15 or 20 feet.

New Mexico.

PINOS ALTOS.—San Diego *Union*, June 30th: The mines at Pinos Altos have stopped work. It is alleged that the suspension is made for the purpose of freezing out a few small stockholders. The mines are very rich, and are located on the route of the proposed Southern Pacific Railroad —32d parallel.

The Anderson and Stone mines, at Apache Pass, have all the machinery up and ready for work but have not started as yet, owing to the scarcity of funds to pay the expenses of running. We saw the agent a few days since on his way out with the money, so that we may expect to hear good news from these mines, shortly.

MORENO.—*Lantern*: Maxwell's mill in two days' run produced 116 ounces....The amount of gold shipped since the 1st of June by express, private parties, etc., will foot up at least 500 ounces per week..... Assays made by Prof. T. G. Rounds, from the Swansea lode, returned $430 in gold per ton. He selected the ore from a shaft but 12 feet deep.

Oregon.

RICH STRIKE.—Jacksonville *Sentinel*, July 10th: The owners of the Malachi quartz ledge on Lightning Gulch, in Josephine County, have struck rich pay.

MINING AT STEAMBOAT CITY.—We learn that the ditch of Sturgis, Titus & Co., is finished. There is 200 inches of water in it, taken from the right hand fork of Appleton Creek. The ditch is 5¼ miles long. The claims compriso 800 yards of the gulch below Steamboat ledge, and are probably the richest in the county. On main Applegate, Harriot's river claim is paying well, pieces weighing from ten to fifteen dollars being frequently found. Epperson & Herbold are getting good prospects. A Chinese company are putting in a wing dam below.

Wyoming.

SWEETWATER MINES.—*State Capital Reporter*, July 16th: Z. Swaringer, has just returned from the Sweetwater mines. There are 3,000 people in the district. The ledges are extensive and well defined. The principal lodes are the Miner's Delight and Mineral Star. Thirty-six tons of ore from the former, at mill yielded an average of $56 per ton, and several hundred tons from the latter gave an average of $45. Five mills are now in operation, and six more will be completed before the close of the season. These are being erected by Eastern capitalists. The principal placer mines are on Rock Creek. They proved a partial failure last season but are now being worked with success. A stratum of gravel has been struck beneath what was thought to be the bedrock, which pays half an ounce a day to the man.

A NEW INDUSTRY — CALIFORNIA CAR WHEELS.—After experimenting for a number of weeks at the foundry of the Sacramento Valley Railroad works, says the Folsom *Telegraph*, car wheels equal in all respects to those sent from the East are being made, and six wheels are now being cast daily at a less cost than they can be procured elsewhere. There is every reason to believe that in a very short time all the wheels required for use on this coast will be cast here, thus opening a new branch of mechanical industry in this State. There is nothing like enterprise and energy when rightly directed. Millions almost have been sent from this State to the East, which by properly directed efforts might have been retained here.

THE EAST RIVER BRIDGE,—soon to join the city of New York and Brooklyn,—will form a gentle arch, with a span of 1,600 feet, and in the center will be a clear hight of 135 feet above low water. The largest ships must strike their top-gallant spars to pass under, but all others will find space and to spare. The survey for the structure has been completed, and the materials are being prepared for the abutments on the river shore.

A WHOLESOME RAILROAD LAW.—A law of Ohio enacts that each railroad in the State shall, when necessary to heat any of its cars, do so by heating apparatus so constructed that the fire in it will be immediately extinguished whenever the cars are thrown from the track and overturned. The same law provides that the cars shall be lighted by candles only.

THE FUTURE REPUBLIC.—When our country shall be as densely populated as Massachusetts is to-day, we shall number a population of 600,000,000, and when it reaches Great Britain in point of density, our population will number more than 860,000,000.

A GREAT CONFLAGRATION.—The great conflagration produced by the burning of the overflow of the oil springs near the Caspian Sea, is said to have extended over a surface 700 miles long by 200 wide. Nearly all the fish in the sea were destroyed, and a great destruction was caused to vegetation for miles around the shores.

Peter Funk.

This well known New York public functionary sends us an advertisement of his business, in the most unexceptionable business style, and under the substantial looking names of "Stewart, Hall & Co., No. 193 Broadway," office of the "Empire Gift Company." Peter (who is an ex-special policeman and quite a politician) announces inducements to the financially hopeful as follows:

"A chance to draw any of the above prizes (pianos, sewing machines, watches, etc.) for 25 cents. Tickets describing prizes sealed in envelopes and well mixed. On receipt of 25 cents a sealed ticket is drawn without choice, and sent by mail to any address. The prize named upon it will be delivered to the ticket-holder on payment of one dollar. You will know what your prize is before you pay for it. Any prize exchanged for another of same value. Satisfaction guaranteed. Six tickets for $1; 13 for $2; 35 for $5; 110 for $15."

Here is an opportunity to try the interesting experiment of putting twenty-five cents through a hole.

CATCHING WHALES BY ELECTRICITY.—*The Engineer* says that H. J. Rogers has submitted a proposal for this to the Society of Civil and Mechanical Engineers. Practical whalemen seem, it is said, to think favorably of it. "A galvanic battery is placed in the whaling boat with a powerful induction coil in communication. From the terminals of the battery two insulated wires pass as conductors, through a line of the size ordinarily used to the harpoon, which is made with two heads, separated from each other, each insulated wire passing through the harpoon to the points where they terminate. The handle of the harpoon is of course insulated. In this harpoon the circuit would be complete when it struck the whale. According to another plan, one insulated wire passes from one terminal through the rope to the end of a harpoon having one point only, the other insulated wire hanging in the water, and acting as a means for the return current. The experiments have been tried on eels and other small fish without perforating the skin. The two wires from the poles of the battery being simply directed in close proximity to each other towards the fish, or one wire at the head and the other at the tail, and the effect has been to produce rigidity and complete temporary paralysis, the eel and other fish appearing perfectly lifeless during, and even after the period of contact.

DECIDEDLY FRENCHY.—The Pall Mall *Gazette* says: "The invariable failure which has hitherto attended nautical expeditions to the Arctic regions has induced two Frenchmen, Messieurs Tissandier and de Fouviélle, to undertake the enterprise of reaching the North Pole in a balloon. The machine in which the bold adventurers are about to embark on their perilous journey, and which is appropriately named 'Le Pole Nord,' is now being completed in the Champ de Mars, which the government have placed at their disposal for the purpose.

The monster balloon, beside which even the famous Géant would seem a mere toy, will contain over 10,000 cubic meters of gas, and is composed entirely of a cloth manufactured from caoutchouc, which will allow of great expansion in the rarefied strata of the atmosphere. The seams uniting the different pieces form a total length of three English miles. The car, a marvel, it is said, of strength and lightness, is constructed to carry ten passengers, 4,000 pounds of ballast, and provisions for a month."

ENGLISH VS. AMERICAN SHIPPING.—The people of the Mississippi Valley, who are making such a laudable effort to secure a cheaper transportation for their grain to to Europe *via* New Orleans, instead of Chicago, are obliged to go to England get their ships. Although a portion of the stock will be taken by capitalists in this country, the ships will be mainly owned and entirely run on English account. The high price of labor and stock in this country has done more to break down American shipping, and transfer our foreign carrying trade to English bottoms, than all the raids of rebel cruisers during the war of rebellion.

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San Francisco:
Saturday Morning, July 24, 1869.

Notices to Correspondents.

Bacchus.—Fusel oil is scientifically known under the name of *amylic alcohol*. In some form or condition it affords all the flavors of various spirits, be they called whiskies, brandies, arrack, or any other names. *Amylic alcohol*, or fusel oil, is an antiseptic. From experiments it has been found that when its vapor is inhaled, the effect is first to produce irritation of the nostrils, afterwards drowsiness, followed by a kind of coma, but not accompanied by insensibility to pain. This is attended by a peculiar muscular action and rigor, which increases in force under excitement. It has never been found to destroy life. Animals brought to the verge of death, and apparently beyond recovery, soon rally after being placed in the open air.

Blue Nose.—According to a paper written by Mr. G. F. Matthews, and read before the London Geological Society, the rocks exhibited in the southern portion of New Brunswick, resemble very much in character those found in the greater part of Canada and the northwestern portion of the State of New York, namely: I. The Laurentian formation—Portland series; II. Huronian series—Coldbrook group; III. Lower Silurian—St. John's group; IV. Upper Silurian; V. Middle and Upper Devonian; VI. Lower Carboniferous; VII. Carboniferous, with a small surface covered with Trias and modern alluvium.

C. H. A.—You have been reading the article on the Rivot process hastily, and quote it incorrectly, as you will see on re-perusal. A chemical formula, furthermore, is not necessarily, nor usually, an "equation." Its chief object is to state results, the equation mark (=) being merely a convenient form of putting it into type. You suggest that protoxide, not peroxide results, plus some volatile sulphur. In point of fact it is principally peroxide, but there remains some intermediate protoxide. The S could not well pass through fire in the presence of oxygen without becoming SO^2. If you can find errors in the Mining and Scientific Press as often as the *Scientific American*, we will be glad to be reminded.

Bird Fancier, Alameda.—The food of small birds varies much according to season, as respects both qualities and quantities. Insectiverous birds are at some seasons as eager in the pursuit of the larvæ, as of the mature insect; at others, worms and analogous minute reptiles are sought. As a whole, the weight of food consumed by small birds is of an animal rather than a vegetable type. The buds of some trees are occasionally destroyed by the feathered creation, but this happens most frequently in consequence of searching for some more destructive grub that lay concealed under cover of such buds.

G. B. E., from Treasure City.—Received too late for insertion this week. Letters have also been received from correspondents at Gold Run, Nev., Vallejo, Cal., and from Quincy, to which due attention will be given next week.

Capital for Mining.

"Nothing can be done without capital," is the wise conclusion arrived at by many a miner who has had the advantage of experience. But capital does not, in these times and in our midst, adequately appreciate a really meritorious mining property. So much the better for euergetic, practical men, with little or no capital, who do; for a good mine, we know, is now and ever will be, as substantial a thing as coin itself.

After a thoroughly intelligent comprehension of the situation in a mining enterprise, capital to work with is the all-important consideration; but the cart must not go before the horse. The mine-owner should know the ingredients of his ores, or have advice thereupon from such practical expert as can be depended upon, together with the quantity that can be got out at a certain cost, how to choose the most suitable process for beneficiating, etc. To err on these points would wreck not only the owner, but the capital that might come to his aid.

It has best suited a majority of the money-eyed operators of San Francisco to buy and sell rather than to work mines—a method of procedure learned and adopted by them from experience, to some extent, it must be admitted. Failure in procuring dividends in mining is to be taken, however, just for what it is worth. Shrewd business men point to the generally alleged fact that mining, on the whole, swallows up as much capital as it yields. Yet we know how many in our midst have had their start in other business by a success in mining. We ought not, in justice, to reckon with the calculation aught but intelligent and legitimate mining,—so different from mere speculation, or from the wild and imaginative fortune-hunting which charactorizes even capitalists on this one subject, that seems to touch the selfish principle in men so closely as to annihilate their usually governing commercial reasoning.

San Francisco capital has been, up to the time of the inroad of "Chicago flats," an anomalous institution, operating in a peculiar manner; with many features which are attractive and interesting to a student capable of grasping financial subjects. Touching its influences upon mining in Nevada, the Hamilton daily *Inland Empire*, an "emancipated" newspaper, says the following very sharp things:

"So general has been the practice of San Francisco capitalists to "freeze out" small owners, and by means, too, less honorable than is the highwayman's practice of obtaining his fellows' valuables, that now men dread to see these same grabbers obtain a foothold here. The Comstock has furnished a history which it is not pleasant to contemplate; a history which it seems to us no well-wisher of White Pine would care to see repeated here. Without very much capital to start with, a ring of banking operators, in connection with the old "Stock Board" of San Francisco, through a systematized course of "bulling" and "hearings" secured the ownership of almost the entire mother vein of Nevada in their own hands. It is useless to prate of good management on the one hand and want of thrift on the other. There is a general sense of justice in the hearts of men which rebels at such a conclusion. Besides, we are all familiar with the way that unnecessary assessments were formerly levied, of the unnecessary expenses to which all the mines were subjected, until small owners were starved or sold out, and the poor man was obliged to give up for naught his title to a fortune. By this we do not mean to say the money-eyed men of San Francisco are all rascals; we do not mean to say there are no money-eyed men in San Francisco who are honest. But, as regards the treatment of Nevada by these people, we have stated a general rule, which has no more exceptions than other general rules. At the same time we would not recommend our people to eschew San Francisco. There is capital there, which, if it were brought here and expended, would benefit both the rich men there and the poor men here. Our people ought to know by this time what to depend upon when dealing with the men of California. Perhaps we might fare no better with the sharp men of the East in mining transactions. There would, however, be one advantage with the latter which has never been realized with the former. They would bring a large Capital here, and invest their money liberally, and they would place us in direct correspondence with markets that would deal generously with us—and that is more than San Francisco has ever done with its dependent interior. In addition, they would wean our people from a mistaken idea of the value of coin over the general medium of exchange in the East, and thus take us out of the clutches of a San Francisco money ring which can create a financial stringency at pleasure."

Let the fact be remembered by those interested in mining undertakings that this is a field to look to for great gains, for untold profits under a shrewd and intelligent management, which at the same time will insure the systematic capitalist under all circumstances against loss. Let no good business man who has money invest it in a mine until he has had the benefit of the judgment of one or more reliable, practical experts in that business. Let him go over all the points himself when so pointed out to his comprehension.

Capitalists who merely buy and sell do not need such assistance; it is a matter of indifference to them whether the mine is destined to pay well or poorly; whether its yield is to be permanent, or whether its prospects are utterly unreliable. Evidently so long as our practical mining interest looks to this class of capitalists for the means of working and development, there will be mismanagement—much of it, and of the grossest kind; for speculators' interests are not essentially dependent upon the exercise of the best possible judgment, and upon keen practical calculation—upon which alone rests the certainty of mining as an investment.

It is about time that mine-owners and managers should possess a little judgment on these subjects; should learn to distinguish between the reliance to be placed upon practical and scientific experts and the impractical or unqualified, who sometimes beguile them. It is time, too, that intelligent mine managers should know just how far a good Cornishman's judgment continues to be the best thing to be followed; likewise how far practical millmen, who have learned pan amalgamation by recipe or by apothecary experiments, can be depended upon for the percentages that belong to the bar shipment account, rather than to the tailings. Intelligent capitalists of course understand these points, and know full well how to take care of their own interests. But what shall be said of those mine-owners operating or found "holding on" in the interior who do not deem it important to be informed up to the mark, who cannot afford to or do not see the good of subscribing for a mining journal; who have nothing to learn from professional men in a business requiring so much skill, experience, general knowledge and science, as mining, and beneficiating to profit? Sapient individuals of this class flourish in many a mine and mill who are yet furnishing the advice and "talk" to those capitalists who buy and sell, or to the greenhorn capitalists who are accidentally in possession of money which they wish to get rid of in so fine a business as imaginative mining.

Mission Woolen Mills.—Miss Annie E. Dickinson and party visited these works and the Pioneer Knitting Mills last week, examining them with a great deal of interest and satisfaction. The works were in full operation, turning out large quantities of superior goods. At twelve o'clock over two hundred Chinamen were found seated in the dining hall, operating their "licee" with chop sticks, affording an amusing spectacle to the visitors. It would take a long article to describe a visit to these mills, and we will only add that our compliments are due to the intelligent gentlemen that showed us around.

Sensible Views.

We would call especial attention of our readers to the remarks of Mr. Raymond, Commissioner of Mines, made before the Academy of Sciences, on Monday last. The views there expressed are eminently sensible and practical. We fully concur with Mr. Raymond in his remarks generally, and especially in his expression that "the license given to all citizens to mine freely on the public lands ought not to be so construed as to permit claims to be held without being worked."

The evil of speculation without capital was well and truly set forth, as well as the flagrant wrongs which have resulted from, and are still inherent in our present mining laws, enabling lazy and dishonest persons to reap the fruit of the honest labor of others, thereby encouraging trickery and indolence. There was also much truth in the remark that our miners are constantly making and wasting knowledge, instead of utilizing it. We regret that we are not able to present to our readers a more full report of his really practical and interesting remarks. Mr. Raymond leaves this city early in the week for Oregon and the mines of Idaho, from which latter he will make his way to the Pacific Railroad on his way home. By the time of his arrival in New York Mr. R. will have traveled fully 15,000 miles in accomplishing the mission to which he has been appointed for the present year.

The State University.

The Board of Regents of the State University held a meetings on Tuesday last, which was devoted mainly to the consideration of the report of the Building Committee. This committee, consisting of Messrs Butterworth, Hallidie and Sachs, reported—

First—That the plans executed by Messrs. Wright & Sanders be adopted.

Second—That the building designated in the plans as the College of Agriculture, be erected as soon as possible. This building will furnish thirteen recitation rooms, two lecture rooms, a faculty room, a reading room, and a temporary library room, museum, cabinet rooms, etc. Estimated cost in brick, with stone dressing, $140,000.

Third—That a separate building be erected containing chemical laboratory, etc. Estimated cost, $55,000.

Fourth—That a small building be erected as a magnetic observatory, in place of the rooms so designated in the plan of the College of Agriculture. Estimated cost, $5,000.

The report was considered and acted upon in detail; the several recommendations being adopted, and the Executive Committee authorized to take measures to commence the buildings as soon as the question of the State's title to the site was finally settled.

Letters were received from Professors Carr and Swinton, accepting the Professorships to which they were elected at the last meeting.

Judge Sawyer of the Fourth District Court yesterday rendered a decision confirming the title of the University to the 160 acres of land, (the Berkley tract) donated to them by the College of California. This decision was the result of a friendly and agreed case.

Fare and Freight.—It seems to be pretty well conceded now that the through fare for emigrants will soon be placed at $50 from New York and about $38 from Omaha—the two roads, it is said, having agreed upon a *pro rata* of division on that scale.

Freight charges on fruit, it is understood, will be five cents to Chicago and seven cents to New York. The first car was loaded with fruit under the new arrangement at Sacramento on Thursday. About ten tons were carefully arranged in the car, including peaches, nectarines, apricots, pears, apples, limes, plums, prunes, grapes, figs, and samples of some of the minor fruits—the object being to determine what could and what could not be sent through in good condition.

New Method of Preserving Fruit.

Mr. J. S. Houghton, in the *Gardener's Monthly*, of Philadelphia, describes a new method of preserving fruit, which has been recently perfected and patented by Mr. C. B. Recs, of Philadelphia, which promises to be of great value to pomologists, and dealers in fruit. Mr. R. was extensively engaged, during the war, in packing meat and food for the various naval squadrons, and out of this experience was developed a method of cooling a meat or fruit room by the aid of a small quantity of ice, so that both a low temperature and an almost perfect dryness of atmosphere is attained at one and the same time, without artificial absorbents. The principle is economical, simple, and easy of application to either stationary rooms or movable vehicles, as cars, ships, etc. A thorough ventilation—the great lack in the usual mode of preserving by ice—is obtained by this invention.

While in Philadelphia, a few months since, Mr. Houghton, briefly explained to us this process, and showed us the invention in practical use, in that city. It is based upon simple natural laws, and we were told that partially decomposed fruit placed in a room to which this invention was applied, soon became dry; and in cases where mere incipient decay had commenced, the spots so speedily became covered with a thin pellicle, that decomposition would often be entirely arrested. This drying process does not reach to the shrivelling of the fruit, but only so far as to remove the external moisture, and thereby preserve, in its natural and healthy state, the interior or pulp of the pear, apple, or other fruit. We hope soon to be able to give a more particular and full description of this process, which no doubt might be advantageously applied to cars employed in the transportation of fruit from California to the Atlantic States.

The Miners' Strike at White Pine.—We have given, in our Mining Summary, the theory of the White Pine *News* with regard to the strike. Since that was in type we have received a letter from an attentive correspondent who writes of this movement, under date of July 18th, as follows:—The strike, as it is commonly termed, still continues, but will no doubt close this week. Most of the leading mines will reduce the pay of their hands to-morrow to four dollars, and with the exception of a few of the best men, that will be the rate of wages. The Miners' Union has opposed the reduction, but by giving a few contracts they will be neutralized."

A Virginia telegram of the 21st announces the total destruction of the Cholar Potosi's new hoisting works. Everything but the iron work was consumed. The company's boarding house, also, and a large amount of wood and timber, were destroyed. The men all escaped through the Halo & Norcross shaft. The fire originated in a defect in the chimney where it passed through the roof. Loss about $200,000.

The State Agricultural Society has issued its official programme for the State Fair, which is to commence September 6th, and continue till the 11th inclusive. Premiums to the amount of $20,000 and seven gold medals are offered for excellence in almost every variety of useful industry, in which human hands and human brains can engage.

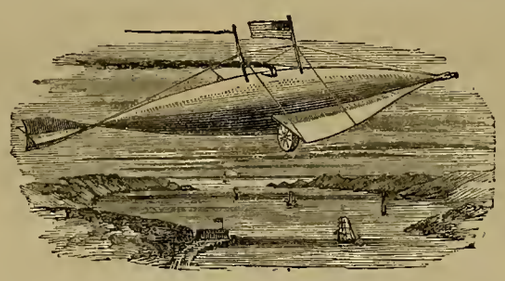
Bad Policy.—It costs about as much for the ferriage of a load of goods across the bay to Oakland—six miles—as it does to transport the same goods from this city to New York *via* Cape Horn. Eight dollars a load is charged for a service of twenty-five minutes. Some of the transportation companies of this State are getting daft; the people will not stand such impositions long.

Have We Solved the Problem of Flying?

The "Avitor" flying machine has been brought to San Francisco, and is now in the Mechanics' Institute Pavilion,—a large building well adapted to a testing of the principles of flying on a small scale—where a number of mechanicians and inventors were on Tuesday last afforded the opportunity to judge for themselves of the merits of Mr. Marriott's invention.

The accompanying engraving represents the Avitor as it is supposed she will appear when making her first trip over the Golden Gate. The propellers are here represented as working below the wings; but in the model at the Pavilion they work inside, showing both above and below. The working of the model has also suggested some slight improvement in the proportions of the machine, which are faithfully represented in the engraving.

So long have men been accustomed to doubt in regard to the practicability of flying—of aerial navigation at will—so ancient is the fancy and desire of the ingenious "lord of creation" to share in the liberty of the denizens of the air, yet so uniformly have all his longings been thwarted on a par with the illogical and impossible perpetual motion, that the wise,



THE "AVITOR" FLYING MACHINE.

the elderly-minded whose hopes are not of budding life and progress, have long continued to shake their heads with the world's full acquiescence in their wisdom. "Man was never made to to fly;" yet he swims, and even amphibiously under water, which is more contrary to his nature than flying.

Had one of our conservative grandfathers entered the Pavilion, as we saw a number of men do on Tuesday, just as the Avitor arose from the ground and coursed through the air past the astonished gazers at the door, (guided only, and held down, by strings fore and aft,) they would have instantaneously reconsidered the soundness and the profundity of their wisdom, and admitted that flying, after all, may yet be accomplished. A sun-fish shaped, likewise very fish-like colored thing about the size of a fifty-ton schooner, was seen making aeronautic *saches*,—evidently flying to and fro without support and entirely of its own accord, like a thing of life; the propelling power being a 45-pound alcohol lamp steam engine, secreted from sight, driving two windmill or propeller fans, one on each side, and scarcely visible as the machine was traveling by.

The sight was, to all present, inspiring, for how could it fail to reawaken in the spectator the fond idea that men are yet destined to fly and that he may live to see the happy day? Has not the Pacific Railroad been built? Nothing, says the inventor and physicist, can hinder or prevent that result but a want of more thorough adaptation of our means to ends. After man's conquest and the wielding of more than ten thousand giants' ceaseless power of steam; of the Titan's prerogative to rend mountains asunder with powder; after his mastery of so almost spiritual a thing as light in photography; after assuming our Maker's attribute of omnipresence in circum-mundane telegraphy,—and after a century of lubberly ballooning itself, may we not begin to question the soundness of our ancient grandfathers' verdict on the problem of flying?

Mr. Marriott's "Avitor" is not, in the ordinary sense, a balloon, since it rests, like the living things of the air, firmly enough, though lightly, on the ground while its two windmill propellers are at rest. The engine-fire having been lighted, this monster flying fish astonished us by taking its departure aerially so much in the manner of a living bird taking wing that the sensation of witnessing it was something refreshingly novel.

It is by a combination of three principles in aerial navigation,—all of them perhaps essential, and all applied in the rationale of the bird,—that the inventor has here added to the actual points of experiment heretofore tested in the history of the attempts to fly. The bird is light, it has the necessary mechanical means of taking hold upon the atmosphere,—just as we are able to take hold of water or of a ladder or steps to lift ourselves; and, at the instant of exerting its lifting force it has a forward gliding on the plane of its wings, the effect of which is to elevate, on the principle of the kite. So far as we are aware, only two of these principles have been heretofore applied in one and the same machine. Tests, very useful and valuable as money-saving means for future experiment toward a solution of the problem of aerial navigation, have been made methodically and are still being made by the London Aeronautical Society, the results of which will greatly redound to the honor of the founders and patrons of that body of scientific mechanicians. From these, it would appear, that an engine alone, including its fuel, can not exert a sufficient power to overcome its own very considerable gravity; and even with an inflated gasometer to overcome the latter, the problem of flying has not been a success. Neither has power combined with the plane, or kite principle, been found wholly practicable. It is not certain, however, but that with lighter engines—electric motors or aluminum machinery possibly—and more perfect screw fan contrivances, the Aeronautical Society may yet arrive at more favorable results on some of these questions.

The Avitor is worthy of a new local sensation at least; and for aught we can see may be the beginning of success in flying. Difficulties that are or may be encountered will give impulse to and call forth skill of others amongst our numerous body of active inventors. Locomotion is demonstrated to be possible. Once started, the least amount of bodily exertion will propel the machine a hundred miles of distance; but the true principle of aerial navigation, we apprehend, will be to take advantage of aerial currents, which are exceedingly interesting, being regular, and capable of being mapped out with almost the accuracy of rivers. A small amount of power exerted in a direction slightly varying from these currents, analogously to steerage or trimming sail to the wind, would be enough to carry the voyageur whithersoever he lists; to old California, by some current like the summer coast winds, thence either to the Sandwich Islands by the trades, or in the exact reverse direction by the counter trades which flow, according to Maury, at a higher altitude with equal regularity; or to Arizona and the Mormon domains by the summer winds from the Gulf of Mexico. With what immediate interest will we study the geography and physical features of distant lands?

The Irishman's trouble of "stopping too suddintly" in a breeze, the starting and the landing of aerial craft, are problems that should not outreach the ingenuity of man. Here is where has been found the principal source of disaster in ballooning. One thing at a time, however: birds, too, must select their perch. We hope that Mr. Marriott's energy in connection with the larger machine which it is proposed to build, will give to the world a demonstration, by long voyages, of a working method of giving direction to the "flight" of an aerial vessel, as the big flying fish in the Pavilion demonstrates it to be perfectly practicable on a scale just large enough for the accommodation of the inventor's "dog Jack."

Fifteen months ago San Francisco first heard of the actual Avitor. A large sized one was then constructed, but it did not fly. Such a result, in a flying machine, was with many conclusive of failure. The difficulty was curiously insignificant: it was found that a gas bag cannot be filled with light gas if it is distended at the beginning and consequently filled with air. The frame is now to be outside, and the balloon can be filled from a collapsed state according to the usual practice.

The Crystal Palace Company, of England, have offered $250 to the exhibitor of a machine which should carry and be worked by a steam engine or other motive power, and sustain and move itself in the air for twenty minutes, at a hight of ten feet from the ground. Whether this machine ever arrives at any commercial success or not, we see no reason why its projectors may not be able to secure the above reward.

Tit for Tat.—Late accounts from China state that a secret society has been organized there, having for its object the exclusion of foreigners from the Celestial empire. The opposition has not yet progressed so far as to assult foreigners in the streets; but merely contents itself with issuing proclamations—probably threatening violence; although we are not advised as to the character of such proclamations. The Chinese are evidently fearful, if foreigners are allowed to come at will, that junks will have to make way for steamboats, palanquins for railroads, and man-power for steam-power, generally, etc. Well, those pagans, after all, are not so very much behind the "most enlightened nations" of the earth.

Alarmed.—The London *News* is frightened at the exodus of Englishmen from Liverpool. In a single week, nearly 7,800 left. This unprecedented efflux is no doubt chiefly due to the fact that the impolitic labor strikes and associations, throughout the land, have sent abroad an undue report of the prices and demand for labor in this country.

Shipping in San Francisco.—There were, a few days since, twenty-nine vessels, with a capacity of 25,517 tons, loading at the wharves in this city for distant ports. There were also, at the same time, thirty-eight vessels, having an aggregate of 27,619 tons, awaiting employment.

Personal.—A. B. Bowers, C. E., author and publisher of the celebrated farm map of the county of Sonoma, and other works, has taken steps to secure through our agency his right to a new invention which looks fair to supply a great want, and add, perhaps, millions to the wealth of this State.

The Right Thing.—A society for the protection of Chinese has been formed in this city. It will find a plenty of work to do, and we presume it will do it.

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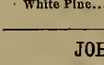
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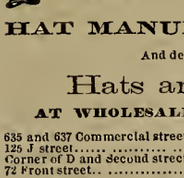
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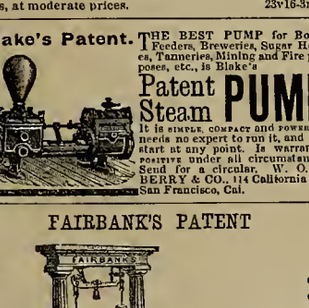

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Farmers and Mechanics
BANK OF SAVINGS,
No. 225 Sansome Street.
Interest paid on Deposits. Money Loaned on Real Estate.
H. DUTTON, President.
GEO. M. CONDEE Cashier. 19v16-3m

M. S. BUCKELEW. GEO. LAMB. R. GROOM.
BUCKELEW & CO.,
Importers and Jobbers of
Choice Teas, Groceries and Provisions,
520 Market street,
Below Montgomery street. 17v18-3m

W. T. ATWOOD,
PURCHASER OF
COPPER ORES, BARS, MATT Etc., Etc,,
505 Montgomery street, San Francisco.
The highest market price paid for ores assaying 10 per cent. and upwards. 23v17qr

D. C. HALL & CO.,
WHOLESALE AND RETAIL
Ale, Porter, Wine and Liquor Merchants,
912 Market street, San Francisco.
☞ City and country orders promptly attended to. Merchants, Shippers and Families supplied in large or small quantities. 3v19 3m

Farms and City Property.
C. H. WAKELEE & CO.,
601 California street, S. W. Corner Kearny street, buy and sell Farms and City Real Estate. Parties wishing to invest will find it to their interest to call on the . 13v18-3m

Pump Leather.
The attention of MINING COMPANIES, and others requiring a superior article for Hydraulic purposes, is invited to the heavy Oaked Tanned Pump Leather, manufactured and prepared expressly by the undersigned.
TRADE

MARK.
Constantly on hand and for sale by
GRAY, JONES & CO.,
Depot of the Santa Cruz Tannery,
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For Miners, Millmen and Metallurgists.
KUSTEL'S NEW WORK,
CONCENTRATION
Of all kinds of Ores, and the
CHLORINATION PROCESS,
For Gold-Bearing Sulphurets, Arseniurets, and Gold and Silver Ores generally.
Price, - - - - - $7.50
A liberal discount to the Trade. For sale by the Booksellers Sent to any part of the United States, postage paid, on receipt of the price. Address,
DEWEY & CO., Publishers,
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16v1tf SAN FRANCISCO.

Mining Secretary.
THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.
Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.
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BARTLING & KIMBALL,
BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers.
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JOHN DANIEL,
(SUCCESSOR TO n. GRAY)
MARBLE WORKS,
No. 421 Pine st. bet. Montgomery and Kearny, San Francisco
Mantels, Monuments, Tombs, Plumbers' Slabs,
Etc., On hand and Manufactured to order.
☞ Goods shipped to all parts of the State. Orders respectfully solicited. 5v8-3m

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
S. E. Corner of Mission and Fremont sts.,
6v14tf SAN FRANCISCO

SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
24v18 1m

J. J. JONES,
CARPENTER and BUILDER,
No. 324 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
7v18tf

W. C. CAMPBELL,
PATTERN AND MODEL MAKER,
No. **20** Fremont street, over Phœnix Iron Works, San Francisco.
Particular attention given to MODELS for the Patent Office Brands and Pattern Letters Cut. 4v18tf

J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, **608** Sacramento street, San Francisco. Orders by express promptly attended to. 6v16

DESKS AND OFFICE FURNITURE.
JOHNSON & BEST,
Manufacturers of all kinds of
Desks and Office Furniture,
717 Market street, near Third, up Stairs.
Warerooms, 413 Pine street, Russ Block,
A large variety of Desks always on hand; all kinds of Office Furniture and Cabinet Work made to order.
18v17qr

SAN FRANCISCO
Pioneer Screen Works,
JOHN W. QUICK, Manufacturer,
Removed to A. Pritzel's Iron Works, 203 Fremont street, near Howard, San Francisco.
Screen Punching in all its branches, at rates reduced from 25 to 40 per cent. less than the established rates. I can furnish Improved Quartz Screens several sizes finer than any Screen ever punched, giving universal satisfaction, and for strength, cheapness and durability are not excelled. Also, Punched Screens of all sizes and fineness made from all qualities of material, for Quartz, Cement, Flour and Rice Mills, etc. Screen Punching made a specialty; therefore millmen forwarding their orders to me will receive none but the best. Orders solicited.
N. B.—J. W. QUICK is the only competent and successful manufacturer of Screens in the State, having made Screens for the principal mills in this State and adjoining Territories for many years. Quartz mill owners using punched Screens which have universally failed to give satisfaction, when visiting the city will please call and see me. 5v17-1y

Pacific Chemical Works.
SULPHURIC ETHER.
SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS,
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞ Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

THE GIANT
POWDER COMPANY
Is now prepared to fill all orders for
GIANT POWDER,
Put up in Boxes, either in Bulk or in Cartridges.
General Agents,
BANDMANN, NIELSEN & CO.,
25v16-3m 210 Front street, San Francisco.

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers and others will please inform us.

A WEEK'S WORK IN BIRMINGHAM.—"Fourteen million pens, ten tons of pins, four thousand miles of iron and steel wire, three hundred million cut nails, one hundred million buttons, six thousand bedsteads, seven thousand guns, twenty thousand pairs of spectacles, one thousand saddles, thirty-eight thousand pounds' worth of jewelry, six tons of *papier mache* ware, five tons of hair-pins, hooks and eyes, and eyelets, one hundred and thirty thousand gross of wood screws, five hundred tons of nuts, screw-bolts, spikes, and rivets, fifty tons of wrought-iron hinges, three hundred miles length of wax for vestas, forty tons of refined metal, forty tons of German silver, one thousand dozen of fenders, three thousand five hundred bellows, one thousand roasting-jacks, one hundred and fifty sewing machines, eight hundred tons of brass and copper wares, besides an almost endless multitude of miscellaneous articles, of which no statistics can be given."

AMOUNT OF MATERIAL IN THE NEW CABLE. The copper wire in the French cable would, if laid out in a straight line, be sufficient to just go round the world; the iron wire would go round one and a half times; the Manila strands would go round five times.

GEO. E. ROGERS,
(Successor to O. W. Bell.)
ASSAYER,
512 California st., San Francisco.
J. A. MARS, Assayer.
Ores carefully Assayed. Gold and Silver Ores worked.
23v16-qr10pnr

CALIFORNIA
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204 Montgomery Street.
Full particulars regarding our Practical Course of Studie may be had by calling at the University, or by addressing
17v17-qy12p E. P. HEALD, San Francisco.

WINDMILL
For Sale Cheap!
Entirely New and of Modern and Approved Style.
For particulars apply to or address this office.

A NEW
Gold Metal.

THE GOLD METAL WATCHES
Now being introduced by
C. E. COLLINS & CO.,
No. 629 Washington Street,
SAN FRANCISCO,
Surpass anything yet made in the way of an Imitation Gold Watch. They wear well, and keep good time.
The Ladies' Watches cost $8 and $10 each.
The Gentlemen's cost $15 and $20 each.
Chains, from $3 to $6 each.

RECOMMENDATIONS:
SAN FRANCISCO, May 12, 1869.
This is to certify, that I have carried one of the small size Gold Metal Watches which I got of C. E Collins & Co., and I find that it runs as well, and keeps as good time, as any watch I ever carried, and I can therefore recommend them. I am engaged on the Sacramento steamer "Chrysopolis." C. A. COLBY.

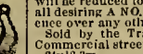
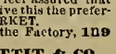
I am engineer on the San Jose Railroad. I have been carrying one of C. E. Collins & Co's watches for about one year, and I can safely say it is the very best watch for time that I have ever seen. GEO. CORNWALL.
Engineer on the San Jose Railroad.

BATAVIA, July 6th, 1869.
MESSRS. C. E. COLLINS & CO.—Gentlemen:—I received the Lady's Watch sent by you, and was much pleased with it. I wish to know what you will furnish me six of them for, with chains to match. Yours, etc.,
W. H. DUKE,
Batavia, C. P. R. R.

The public are cautioned against buying their watches at high prices, as many of them are sold for genuine *Gold Watches*, at from $100 to $150 each.
For List of Prices and Description of Goods, send directly to us. Can be sent by Express to be paid for on delivery.
C. E. COLLINS & CO.,
No. 629 Washington street, San Francisco.
P. S.—Where six watches of the above are ordered at one time, we will send one extra, free of all charges.
We also deal in the finest Gold and Silver Watches, Watch Materials, etc. Send for circulars or prices.
26v18 4t

CARLOS O'DONNELL'S
California Cordial Tonic,
—OR—
Wild Cherry Bitters.
TRADE C. O. D. MARK.
This elegant preparation is acknowledged by all who have used it to be the most efficient remedy for every disease of the
STOMACH AND BOWELS,
Yet introduced to the notice of the public. Immediately on taking a dose of it, the patient will find a genial glow pervading his entire system, and its steady use for a short time will be followed by a healthy appetite and a good digestion, even in the case of the most confirmed dyspeptic.
To all who are suffering from
INDIGESTION,
DYSPEPSIA,
DYSENTERY,
DIARRHŒA,
NERVOUS AFFECTIONS,
Or any of the manifold troubles caused by a diseased action of the stomach, this remedy is confidently recommended as a safe and certain cure.
N. B. JACOBS & CO., Sole Agents,
15v18-3m 423 Front street, San Francisco.

That will resist the extremes of heat and cold without liquefying or hardening.
It is therefore peculiarly adapted to the varied climate of this coast, especially localities where THE WEATHER BECOMES EXCESSIVELY HOT, causing oil and all other kinds of grease to run from the axle, retaining the proper position. It remains soft until exhausted, leaving no deposit of GUM, TAR OR PITCH. Its superior lubricating properties, durability and cheapness have been tried and approved by the CENTRAL PACIFIC AND OTHER RAILROADS, STAGE PROPRIETORS, STABLE KEEPERS, TEAMSTERS, CONTRACTORS, MILLMEN, FARMERS, and many others who prefer to
USE NONE BUT THE BEST.
It being prepared by a peculiar CHEMICAL COMBINATION OF OIL, previously freed from gum or other deleterious substances, it must be obvious that by its use friction will be reduced to the lowest point. We feel assured that all desiring A NO. 1 LUBRICATOR will give this the preference over any other Grease IN THE MARKET.
Sold by the Trade generally, and at the Factory, 109 Commercial street, San Francisco.
24v18-3m PETTIT & CO.

California Steam Navigation

COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE
" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE.....
" CORNELIA.....CAPT. W. BROMLEY
" JULIA.....CAPT. E. CONCKLIN.
Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.
Office of the Company, northeast corner of Front and Jackson streets.
B. M. HARTSHORNE,
13v12 President.

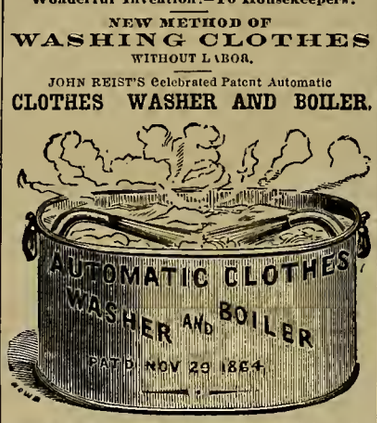
THE CHARLES HARKNESS
Patent Wax Candles,
Have now an established reputation on this Coast. Their uniform quality, much superior to any Adamantine Candles, is
Well Known to Miners.
They burn longer and better than other kinds, and are really the most economical Candles in the market.
FREEMAN, SMITH & CO.,
110 California street,
Manufacturers' Selling Agents. 21v18-3m

SULPHURETS;
What they are;
How Assayed;
How Concentrated;
And How Worked;
With a Chapter on the
BLOW-PIPE ASSAY OF MINERALS.
By WM. BARSTOW, M. D.
Published by A. Roman & Co., San Francisco.
For sale at this Office.—Price, One Dollar.
With the aid of this Book, the miner can assay his own ores, requiring but few materials, etc., except such as are generally to be found in the interior towns. 21v18tf

REGISTER YOUR LETTERS containing money addressed to us, or we will not be responsible. Remittances by Express must be in packages, prepaid. When practicable, it is best to remit by draft, or order, on some San Francisco bank or firm.

Ayer's
Hair Vigor,
For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* This hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a
HAIR DRESSING,
nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.
Prepared by Dr. J. C. Ayer & Co.,
PRACTICAL AND ANALYTICAL CHEMISTS,
LOWELL, MASS.
PRICE $1.00.
Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H McDonald & Co., Sacramento, General Agents. 25v18eowim

Wonderful Invention!—To Housekeepers!
NEW METHOD OF
WASHING CLOTHES
WITHOUT LABOR.
JOHN REIST'S Celebrated Patent Automatic
CLOTHES WASHER AND BOILER.


This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S. Patent Office, November 4, 1868.
See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco,
Dealer in Stoves and Tinware.
25v1 3m 67 and 69 Fourth st., bet. Mission and Jessie sts.

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa, have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various Importers and manufacturers have attempted to attain a reputation for their prepared Cocoas, but we doubt whether any thorough success had been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of "Maravilla" Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage.
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate, Steam Mills, Brick Lane, London.
6v18-6m

New Almaden Vichy Water,
(CALIFORNIA VICHY WATER.)
FROM THE SPRINGS,
NEW ALMADEN,
Santa Clara County.
F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.
OFFICE, 506 JACKSON STREET,
GENERAL DEPOT:
Corner of Jackson and Montgomery streets.
This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the veinous circulation.
It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.
California Vichy Water is used with success in many cases, such as—
Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever*; Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoids; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever*; Gout, *when the patient is still able to walk*; Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.
(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.
PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.
Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's
Claims and Mill,
Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 300 feet. A force of thirteen men only are required to keep both mill and mine running regularly.
On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which factgoes to prove that a heavy deposit of ore was once contained in the croppings of these shutes, which, by all former and present theories of deep mine workings, came from below, indicating that when sunk upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.
This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.
The last level, 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $1 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.
Now I propose to sell two thirds of this valuable property for $16,000, cash; and any party who desires to purchase a property of this kind—which theory has proven that irrequires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.
For any further particulars, direct by letter to Wm. Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.
22v18tfqr WM. BOSWORTH.

A Long Desired Article
FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using
CAMILLE CHAMPOO,
which not only does away with the poor soap so offensive to use, and so injurious to the hair, but it cleans the head, strengthens and beautifies the hair, preserves the color, and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERTON & LUELLING, 773 Mission street, San Francisco, Cal.
HEATHFIELD & BOGLE, Wholesale Druggists, 206 and 208 Battery street, San Francisco, sole Agents for the Pacific Coast. 24v18-3m

New Books.

The Practical Application of the Slide Valve and Link Motion to Stationary, Portable, Locomotive and Marine Engines, with New and Simple Methods for Proportioning the Parts—By Wm. S. Auchinclass, C. E. Price, $3.

The aim of this very useful book is to give a series of simple and efficient rules "for determining the proportions suitable to any link motion without the assistance of an expensive and cumbrous model, or the delays incident to its manipulation." From the great number of variable quantities introduced by the peculiarities and connections of the link, it is impossible to construct any algebraic formula which shall solve all the various problems; and the author, while admitting this, has still succeeded in giving a number of rules, so that by the use of an easily-constructed template and two sheets of drawings,—one containing the various positions of the eccentric, and the other the journeyings of the link,—all the most important problems may be solved, and the arrangement of the parts determined, by any one of ordinary skill.

Another portion of the work, and one which has grown incidentally out of the main feature, is a comprehensive view of the causes which regulate the form and dimensions of the cylinder, slide valve and eccentric; and this is admirably treated, giving a clear and concise statement of these causes. The stroke table, the table of crank angles, and others, together with the travel scale, render the work well worthy of perusal, and should render it invaluable to the mechanic. For sale by A. Roman & Co.

Beet Root Sugar and Cultivation of the Beet—By E. B. Grant. Boston: Lee & Sheppard, 1867. 12mo, pp. 158.

Sugar producing is one of the most important and best paid industries that can be pursued by the agriculturist. The success of beet-root sugar in Europe and the fact that the United States consumes 400,000 tons annually, while it produces only 50,000—leaving 350,000 tons to be imported—has induced the author to gather these useful data for the guidance of agriculturists in this country. Part I gives the history of beet sugar. Part II is a practical and purely agricultural manual. Price, $1.

Three Seasons in European Vineyards—Treating of vine culture; vine disease and its cure; wine making and wines, red and white; and wine-drinking as affecting health and morals—by Wm. J. Flagg. New York: Harper Bros., 1869. 12mo, pp. 332.

Mr. Flagg visited the vineyards of Bordeaux, Augustaine, Medoc, Sauterne, Langedoc, Burgundy, Epernay, Rheims, the Rhine, Durkheim, Switzerland, Italy, etc., and discusses such practical questions as would suggest themselves to an American vine culturist abroad; *wine making* being kept constantly in view as the more important question. Pasteur's and other new processes are described. The gay spirit of the vineyards is reproduced in the author's piquant handling of the subject. More information will be gathered out of this book than out of many of the heavier manuals. Price, $1.50.

New Incorporations.

State Line G. & S. M. Co.—July 20. Capital stock, $1,000,000; shares, $100 each. Trustees: H. B. Angell, J. Augell, G. W. Prescott and J. H. Stewart.

California Slate Co.—Calaveras county. July 20. Capital stock, $600,000; shares, $100. Trustees: F. L. A. Pioche, L. L. Robinson, E. A. Robinson, William Alvord and S. F. Butterworth.

Almo S. M. Co.—White Pine. July 22. Capital stock, $1,000,000; 10,000 shares, $100 each. Trustees: G. M. Burnham, P. H. Blake, C. L. Prince, W. M. Worcester and W. B. Latham, Jr.

Berkeley View Homestead Association.—July 20. Capital stock, $18,300.

Linnen Homestean Association.—July 20. Capital stock, $23,000.

Silver Going East Overland. — A consigument of three tons of silver bricks were recently received at Chicago, in one day, by the Pacific Railroad.

California Academy of Sciences.

At the meeting of the Academy, held on Monday evening, David Hughes, Samuel Brannan, Jr., W. W. Dodge and Dr. W. H. Titcomb were elected resident members. Dr. T. Van Orden presented some interesting specimens from Treasure City, Whithe Pine; and Mr. Plummer, of San Antonio, a section of a Puget Sound pine log containing a bullet which may have been shot into the tree fully 100 years ago, as over that number of concentric rings of annual growth had been formed over it.

Interesting Remarks from Mr. R. W. Raymond.

Mr. R. W. Raymond, Commissioner of Mining Statistics for the mines west of the Rocky Mountains was present, and on invitatation of the President, Dr. Cooper, made some very interesting remarks with reference to the mines and mining interests, of which the following is a condensed report: He declared the doctrine of a crown right over the precious metals, or any other mineral treasures, to be unfounded in history, law and equity; and any policy or mining system founded upon the assumption of such a right to be unwise and unsuited to the institutions of a democratic State. The gold and silver mines of the West are under the control of the Government, simply because they are on the public domain; and the best thing that can be done with the mineral lands is just what is done with the agricultural lands—sell them as fast as possible to the citizens who will develop them. The effect of the present United States miniug law was analytically explained, and it was shown that in its sweeping recognition of the "customs" of the mining districts, which are often whimsical and unjust, and always shifting and uncertain, the law defeats its own object. Mr. Raymond insisted that the license given to all citizens of the United States to mine freely on the public lands ought not to be so constructed as to permit claims to be held without beiug worked.

Claims should be so recorded that they can be legally identified; and then a reasonable amount of work, and a maintenance of landmarks should be absolutely required, to secure the possessory title. No title but that of the United States should be considered permaneut and unforfeitable. The evil results of stock speculatiou and swindling or foolishly mismanaged companies are insignificant, compared with the curse of speculation without capital, which infests the mining districts.

At the present time, many districts have passed through the stage of speculation in the ordinary sense, and the inhabitants are beginning with indnstry and persoual attention to economy to do for themselves what formerly they waited supinely for others to do; and it is just at this point that the incubus of old mining laws makes itself most oppressively felt. No sooner does the *bona fide* miner, with perseverance and skill, in a half-abandoned neighborhood, discover, develop and utilize with profit the mineral wealth of the public domain, than an old "location" is revived, and under some forgotten law, the assignee of some forgotteu "locator" lays claim to the fruit of which he never even planted the seed. The mining speculations of which we hear so much complaint, do, after all, help the development of the country. They pay out money, and when they finally explode, they leave in the mining districts good buildings and pleuty of old iron. But this speculatiou, without capital, actually destroys the freedom of the miner upon the public lands, and throttles industry from the beginning.

Passing to other points connected with mining industry, Mr. Raymond reiterated his conviction of the necessity of an *American* science of mining and metallurgy. Most meu, said he, seem to think science means Germany, and books. Now we are makiug science on this coast every day, and throwing it away. What I want is to collect and save it. What is called "practico" is experience wasted, or selfishly kept secret. The best agency for the concentration and crystallizatiou of our great expericuce in the mines, mills and furnaces of this country, would be a National School of Mines.

In conclusion, the Commissioner appealed to the members of the Academy, as men of science, to be also men of the people, to take an interest in the application of knowledge to life, and to assist by every meaus in their power in the solution of the economical, social, political, mechanical and other problems which vitally concern the present and future of this country.

Mr. Raymond solicits at all times from the citizens of this slope, iuformation, suggestions, inquiries and opinions concerning any subject related to the miniug interests. Communications may be addressed to him at his office, 37 Park Row, New York. He leaves this city in a few days for a personal inspection of the mining districts of Oregon, Idaho and Montana. His report for 1868 has been published, and can be obtained through members of the House of Representatives. Copies of the special edition, published by a house in New York, can be obtained through any bookseller.

In private conversation the Commissioner, who has visited already, this season, Colorado, Wyoming, Utah, White Pine, Reese River, Washoe, Grass Valley, etc., expresses himself as satisfied that the bullion production will equal if not surpass that of 1868, while the basis upon which mining enterprise stands is palpably becoming every year less fanciful and more business-like. The supreme needs at present are a universal, simple and consistent law, giving sure titles, and some organized ageucy for both the collection and the diffusion of information.

New Rule About Patent Office Drawings.

Hereafter, in accordance with the new rule of the Commissioner of Patents, all drawings sent to the Pateut Office will be returned to the applicant or his agent, unless they are artistically made. The principal reason for this grows out of the fact that duplicate drawings are to be photographed—one copy to he attached to the patent, and other copies are to be used for the convenience of the examiners in charge of the respective classes. The Commissioner advises applicants to employ competent artists to execute their drawings, which is also a good suggestion.

The promulgation of this new rule leads us to remark, that recently there has grown up a practice on the part of some agents to file miserably prepared drawings, simply for the reason that their slip-shod manner of doing business has forced them to adopt the cheapest possible plan. The consequence is that the portfolios of the office are encumbered with a mass of rough outline sketches, which are neither artistic nor creditable to the office. The Commissioner evidently does not mean to encourago this disregard of artistic merit. He has a right to insist that all drawings hereafter to be filed shall possess a certain degree of excellence and faithfully illustrate the invention in detail.—*Sci. American.*

The above remarks are quite true. We are frequently called upon to make proper drawings (as well as amendments to specifications) prepared and sent to the Patent Office months previously by inventors themselves, or their incompetent agents.

Quick Work.—The Chicago party visited the San Francisco Board of Brokers on Saturday last, and were very much surprised to have printed copies of the proceedings of the Board placed in their hands, within four minutes after the Board adjourned; but Wheeler & Co. did it.

To Make a Balky Horse Draw.—In India, where a horse can and will not draw, instead of whipping or burning him, as is frequently the practice in more civilized countries, they quietly get a rope, and attaching it to one of the fore feet, one or two men take hold of it, and advancing a few paces ahead of the horse, pull their best. No matter how stubborn the animal may be, a few doses of such treatment effect a perfect cure.

Sink of the Eberhardt.—We have received a steroscopic view of the "Sink of the Eberhardt" mine, on Treasure Hill, White Pine, Nevada, showing the portal of the tunnel and how it is situated in the hill side.

Gold Fish in the Potomac.—It is said that the Potomac is becoming stocked with gold fish, from a few that escaped into it out of the Capitol fountain.

Ore from Humboldt.—We have received several very fine and somewhat unique specimens of ore from Humboldt, with assays, which will be noticed next week.

Another.—It is stated that parties in Chicago have commenced the construction of an air-ship, similar to the Avitor of this city.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to Dewey & Co., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

For the Week Ending July 13th.

Composition for Tonaoco Substitute.—J. Bertram Webster, Stockton, Cal., assignor to himself, W. E. Greene and H. Winslow, same place.—92,497.

Wire Cutter.—H. Axtell, Yreka, Cal.—92,507.

Door Clamp.—H. O. Hooper, Diamond Springs, Cal.—92,531.

Reciprocating Force Bellows. — Butler & Stucker, Silver City, Idaho Territory. 92,580.

This invention relates to an antomatic bellows for furnishing blasts of air for various purposes, but more particularly for blacksmiths' forges, the ventilation of mines and for foundry blasts. The machine is composed of two bellows, working horizontally on guides. Valves are placed at either end of the horizontal bellows, by which means the air is drawn in and forced into a reservoir placed in front of the bellows, from which it is forced out through a nozzle. The two horizontal bellows are operated by means of a spring and gears, so that all that is necessary to do to furnish a blast is to wind up the spring and let the machine blow.

Molding Machine—James Hatch, San Francisco, Cal.—92,609.

Globe Lamp.—John W. Shehan, San Francisco, Cal.—92,661.

Let us have more light! This exclamation we frequently hear and oftener see in print, but the light asked for in most cases has been of the intellectual kind. Mr. Shehan in this inventiou has endeavored to improve our artifical lights in order to remove the darkness more effectually than can ho done by the use of the common globe lamp. The invention consists in making the globe which surrounds the light or flame double, and filling the space between them with clear water. By this arrangement he claims that the rays of light in passing through the water will be refracted or broken, and thus light up the entire globe into a bright luminous body, giving a much greater intensity of light than the direct rays can possibly furnish. The chief point of inveution rolates to the apparatus for regulating the supply of water which fills the space between the globes.

Can Opener.—M. E. Davis, Folsom, Cal. 92,520.

Foreign Postage Rates.

	Letters, ½ oz.*	Newspapers.
Acapulco (Mexico)	10	2
Algeria, French mail	30	2
Argentine Republic, by packet fm N. Y., 23d of each month (¼ oz., 18c)	25	4
do do via France, Fr. mail from Bordeaux (½ oz., 15c)	30	6
Aspinwall (or Panama)	10	4
Australia, via Panama	22	6
do by private ships	3	
Austria (See German States below)		
Belgium—Same as German States		
British N. Am. Provinces, within 3,000 miles	6	2
do do do over 3,000 miles	15	2
do do do Dom'ns of Canada	6	2
Central America, Pacific Slope	10	2
China, by steamer from San Francisco	10	2
Chili	34	
Cuba	10	
East Indies, via China	10	
France (½ oz., 15c.)	30	2
German States and free cities, including Austria, Bavaria, Baden, Brunen, Brunswick, Frankfort, Hamburg, Hanover, Luxemburg, Lubec, Mecklenburg, Oldenburg, Prussia, Saxe-Altenburg, Coburg-Gotha, Meiningen, Weimar, Saxony, and Wurtemburg, by North German Union	10	3
do do by closed mail via England	15	4
Great Britain (Ireland, Scotland and Wales)	12	2
Holland	15	4
Italy, direct closed mail via England	15	4
Italy, via North German Union direct	14	7
Japan, via steamer from San Francisco	10	2
Mexico	10	2
Nicaragua, Pacific Slope of, and Panama	10	2
New Zealand	22	6
Poland	20	
Roman or Papal States, via N. German Union	14	7
Russia	20	5
South American States, Atlantic Coast, via Eng.	34	4
do do do Pacific Coast	34	6
Sandwich Islands, by steamer	10	2
Spain, via England (¼ oz., 22c)	34	6
Sweden, via North German Union	16	8
do closed mail via England	21	9
Switzerland, direct closed mail via England	15	4
West Indies, Br. & Danish mail, via St. Thomas	10	2
West Indies, North British mail	18	

*Most of these rates require prepayment.

The Mining and Scientific Press, published by Dewey & Co., San Francisco, is among the most valuable publications on the Pacific Coast, especially to a mining community.—*White Pine Telegram.*

Resources & Developments

COFFEE IN LOS ANGELES.—A gentleman in Los Angeles is going into an extensive exporiment in coffoo raising. He has already received the seed.

THE OVERLAND STAGE CO. aro abont to transfer their stock to the southern route, and will establish a new lino through Arizona and New Mexico, making San Bernardino their starting point.

EUROPEAN IMMIGRATION.—Much interest is felt in favor of some concerted plan by which California may be ablo to socnro a greater sharo of the skilled emigrants which are now ponring into the Eastern States. Our great land monopolists, and high fares by steamer and railroad are pronounced the chief hindrances in the way. Both land owners and transportation companies are working against their own interests by their excessive charges.

SLATE IN SAN JOAQUIN.—Another slato quarry has been opened, a few miles to the northward of the Copperopolis road, in San Joaquin county, which promises equally well, if not better than the one to which attention has been already called, to the south of that road. The quarry is owned by Messrs. Hendsch & Govey. This slate is wholly free from iron stains and iron pyrites; it is described by the Stockton *Independent* as being remarkably compact, smooth, readily spliting into sheets of any desired thickness, and snitable for school slates, for rooting or billiard tables.

TULARE COUNTY.—Settlements on the Tnle river are said to be progressing more rapidly than almost any other portion of the State.

TULE RIVER SODA WATER.—Another sparkling soda spring has been discovered on tho Tnle river, sixteen miles above Vandalia, where the temperature is 15° to 20° ahove that of the surrounding valley, and where brook trout are plenty.

FRUIT AND VEGETABLE GARDENS are becoming quite plenty on the San Joaqnin, between Rongh and Ready and Mossdale. These banks, formerly covered with an intermixable series of tules and brush, are being fast reclaimed, and hundreds of acres have been leased to Chinamen, by whom the grrdens aro chiefly carried on. The Western Pacific crosses the river at Mossdale.

DOORS.—Immense numbers of sugar pine doors are made in the Sierra timber region, above Placerville. Twelve hnndred and fifty came down the other day, from Hooper & Lepctit's mill, in a single shipment, to a firm in this city.

MACKEREL.—The Monterey *Democrat* reports whales in large numbers in the bay of Montercy. Seven were bagged in one week by the whalers in that place. Mackerel have also made their appearance, after an absence of many years.

CODFISH.—The J. H. Roscoe arrived a few days since, bringing 45,000 codfish. She brings reports from teu others of the codfishing fleet in the Alaska waters, whose aggregate catch up to July 5th was 214,000 fish.

SALMON.—An export demand for Oregon salmon is gradually growing up. Two hundred cases were shipped a few days since to Australia and 764 to New York. Shipments to the latter port are quite frequent. Oregon salmon, properly packed, compare favorably with those put up in the best markets in the world. We are glad to know that they have been eo successfully introduced into the Eastern market.

PRODUCE RECEIPTS.—The excess in the receipts of wheat, barley and oats, in this city, during the first eighteen days of July, over that for the same period, last year, was within a fraction of 60,000 sacks—an increase of nearly 50 per cent.

IVORY.—A gentleman from Koliak informs the editor of the Alaska *Herald* that he has seen an immense quantity of mammoth ivory in the Peninsula of Alaska. The natives make furniture for their houses from it.

LEGHORN STRAW.—The *Alta* suggests the introduction of the culture of Leghorn etraw into this State, and says that the upper foot-hills have just the soil and climate for such production. Tuscany exports this straw to the valne of a million a year, all of which is cultivated in soil under just euch conditions as exist in our foot-hills. This straw is a peculiar variety of wheat, which must be cultivated in a light, dry soil; it must be sown thickly, so as to be stunted in its growth, and cut before ripening. The great care is in cutting and bleaching it—for which the climate of California is better even than that of Italy.

ANOTHER SUGAR REFINERY has been incorporated in this city, with a capital of $200,000. A frame building for the company's works, is now being put up in Hayes Valley. It will have a capacity of five tons a day. There are already four refineries in this city, although three—the Bay, San Francisco and Pacific are under one management. The California, which is the fourth one, and the Pacific—tho two that are running—are capable of turning out seventy tons per day—an amount equal to the present consumption of the coast. It is doubtless to the prospective increase of this coast, which the new company looks for success. There were 20,000 tons of raw sugar received at this port last year; which amount will be increased by at least 2,500 tons for the current year.

MINING ITEMS IN BRIEF.

FOR ARIZONA.—There is a large prospecting party being made up in Grass Valley to go to Arizona to search for the precions metals. The party will be well provided with arms, provisions and animals, and they intend to visit unexplored regions in spite of weathor or Indians.

THE Allison Ranch Company of Grass Valley, are applying for a patent to their mine.

GOLD DISCOVERY IN MEXICO.—It is reported that gold fields 120 miles long, exceeding California mines in richness, have been discovered near Colima, Northwestern Mexico, and that diggers are gathering there in large numbers.

MAGNETIC IRON ORE.—A large bed of magnetic iron or loadstone, exists in Cope district, which, it is said, by its attraction, draws upon it the lightning of every thunder-storm. The surface of the ledge lies in waves of solidified slag, blackened and glazed like the cinders of a blacksmith's forge, doubtless from the effects of lightning, which for ages has made this spot its target.

BLOODSTONE.—A valuable bed of bloodstone has recently been discovered by Prof. Shephard, near St. Mary, Mo. There is one other place in the United States, near Troy, N. Y., where it has been found. This mineral is highly esteemed for ornamental work, and is similar, in hardness and compositiou, to agate. It may be known by the presence of numerous red or yellow spots (dots) on a greenish ground. It is of a resinous luster.

THE DIAMOND DRILL is to be put into operation in Colorado this year. Prof. Whitney has contracted to bore eight hundred feet into Fletcher Mountain, Summit County, and expects to do the work in thirty or forty days. The hole is to be six inches in diameter, and will pierce some leads 1,200 feet deep.

New Mining Advertisements.

Cordillera Gold and Silver Mining Company.— Morelos District, Chihuahua, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of July, 1869, an assessment of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 321 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY R. REED, Secretary.
Office, 321 Washington street, San Francisco. jy21

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five (5c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No 502 Montgomery street, Room No. 3, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DUPRAT, Secretary.
Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy24

Marlborough Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada,

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DUPRAT, Secretary.
Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy24

Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty first day of July, 1869, an assessment of two dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the thirtieth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, Room 37 New Merchants' Exchange, California street, San Francisco. jy24

Mining Notices--Continued.

Daniel Webster Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco, Cal. jy3

Evening Star, No. 1, Silver Mining Company Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of June, 1869, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Saturday, the thirty-first day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-first day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.
Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. je26

North Star Gold Mining Company---Location of Works: Grass Valley, Nevada County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the fourth day of June, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm H V Cronise, Trustee	4	1	$ 20 00
C F Fargo	5	87	1740 00
Thomas Hope	6	87	1740 00
Jas B Crossman	8	1	20 00
P O Partridge	10	37	740 00
W E Dean	11	1	20 00
A E Hill, Trustee	16	20	400 00
E N Torrey	23	5	100 00
Geo W Beaver	28	29	580 00
A E Hill, Trustee	29	15	300 00
P O Partridge	31	1	20 00
Samuel P Holden	35	5	100 00
Samuel P Holden	36	5	100 00
Violetta Clement	39	10	200 00
Benjamin Brady	42	10	200 00
Benjamin C Wright	44	5	100 00
Thos J Poulterer	45	50	1000 00
A E Hill, Trustee	47	15	300 00
A E Hill, Trustee	52	10	200 00
A E Hill, Trustee	57	10	200 00
A E Hill, Trustee	58	10	200 00
A E Hill, Trustee	59	10	200 00
A E Hill, Trustee	64	65	1300 00
A E Hill, Trustee	65	75	1500 00
A E Hill, Trustee	69	10	200 00
W L Torrey	72	5	100 00
A E Hill, Trustee	73	5	100 00
A E Hill, Trustee		2	40 00
A E Hill, Trustee	82	90	1800 00
A E Hill, Trustee	85	5	100 00
A E Hill, Trustee	86	5	100 00
L Kuhn, Trustee		5	100 00
L Kuhn, Trustee		5	100 00
A E Hill, Trustee		25	500 00
A E Hill, Trustee	0	25	500 00
A E Hill, Trustee	101	25	500 00
Thos J Poulterer	10	10	200 00
A E Hill, Trustee	103	15	300 00
A E Hill, Trustee	104	5	100 00
A E Hill, Trustee	105	5	100 00
E T Pease	106	10	200 00
E T Pease	107	10	200 00
E T Pease	108	10	200 00
E T Pease	109	10	200 00
E T Pease	110	10	200 00
E T Pease	111	10	200 00
E T Pease	112	15	300 00
R T Thomas	117	50	1000 00
M Bettman	118	5	100 00
A E Hill, Trustee	120	32	640 00
A E Hill, Trustee	123	5	100 00
A E Hill, Trustee	125	10	200 00
Wm B Allen	127	5	100 00
McDonald & Whitney, Trus	129	3	50 00
E T Pease	130	15	300 00
Charles Stevens	131	10	200 00
Charles Stevens	132	5	100 00
Charles Stevens	133	10	200 00
John W Titcomb	134	10	200 00
Thos J Poulterer	136	50	1000 00
John W Titcomb	138	10	200 00
A E Hill, Trustee	139	10	200 00
Geo W Beaver	143	50	1000 00
C F Fargo	144	10	200 00
A H Lissak, Jr., Trustee	146	5	100 00
George A Raymond	147	5	100 00
A H Lissak, Jr., Trustee	148	5	100 00
K P Harmon, Trustee	149	1	20 00
W B Bourn, Trustee	150	750	15000 00
A E Hill, Trustee	153	74	1480 00
A E Hill, Trustee	155	20	400 00
A E Hill, Trustee	157	6	120 00
A E Hill, Trustee	158	500	10000 00
A E Hill, Trustee	159	30	600 00
A E Hill, Trustee	160	100	2000 00
A E Hill, Trustee	161	10	200 00
A E Hill, Trustee	162	130	2600 00
A E Hill, Trustee	164	56	1120 00
A E Hill, Trustee	165	23	460 00
A E Hill, Trustee	166	16	320 00
A E Hill, Trustee	167	3	50 00
F A Hassey	168	5	100 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth day of June, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 10 at No 402 Montgomery street, San Francisco, on Friday, the thirtieth day of July, 1869, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. W. COLBURN, Secretary.
Office, room No. 10 second floor of No. 402 Montgomery street, San Francisco jy10

George Washington Silver Mining Company, White Pine, Nevada.

NOTICE.—The Annual Meeting of the Stockholders of the above named Company, for the election of Trustees for the ensuing year, will be held at the office of the Company, No. 10 Stevenson Building, S. W. corner Montgomery and California streets, on FRIDAY, the 23d day of July, 1869, at 4 o'clock P. M.. Per order.

THOS. J. OWENS, Secretary.
San Francisco, July 16, 1869. jy17

George Washington Silver Mining Company. White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of ten cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twelfth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth (30th) day of August, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.
Office, Stevenson Building, San Francisco. jy10

I. X. L. Gold and Silver Mining Company.—Location of Mine: Silver Mountain District, Alpine County, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the tenth day of May, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. shares.	Amount.
Bridges, Mary C.	260	12½	$18 15
Senter, Riley	65	10	15 00
Clark, T R	375	10	15 00
Clark, T R	346	22½	33 75
Lane, E M	254	10	15 00
Phillips, Chas C	60	4¾	6 55
Vega, F de la	154	11	16 50
Jardin, Henry	188	5	7 50
Jardin, Henry	304	3	4 50
Jardin, Henry	330	12½	18 75
Jardin, Henry	331	5	7 50
Hepburn, James	116	5	7 50
Hepburn, James	154	5	7 50
Hepburn, James	217	10	15 00
Bolts, John	266	8	12 00
Hatch, F S	312	8	12 00
Cutter, R S	366	3½	5 25
Cutter, R S	384	10	15 00
Long, M	385	22 7-16	33 60

And in accordance with law, and an order of the Board of Trustees, made on the tenth (10th) day of May, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. Olney & Co., auctioneers, No. 426 Montgomery street, San Francisco, on Wednesday, the fourteenth day of July, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. CROWNINSHIELD, Secretary.
Office, Pioneer Hall, Montgomery street, up stairs, San Francisco. jy5

POSTPONEMENT.—The above sale is hereby postponed until Monday, the twenty-sixth day of July, 1869, at the same hour and place. By order of the Board of Trustees.

jy17 J. CROWNINSHIELD, Secretary.

San Fernando Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of the Stockholders of the San Fernando Tunnel and Silver Mining Company will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 3 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner Montgomery and California streets.
San Francisco, July 1, 1869. jy3

Sedgley Tunnel and Silver Mining Company. White Pine Mining District, State of Nevada.

The first Annual Meeting of the Stockholders of the Sedgley Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 1 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner of Montgomery and California streets.
San Francisco, July 1, 1869. jy3

Thunderboldt Mill and Mining Company, White Pine, Nevada.

NOTICE.—The Annual Meeting of the Stockholders of the above named Company, for the election of Trustees for the ensuing year, will be held at the office of the Company, No 10 Stevenson Building, S. W. corner Montgomery and California streets, on FRIDAY, July 23d, 1869, at 4 o'clock P. M. Per order. THOS. J. OWENS, Secretary.
San Francisco, July 16, 1869. jy17

Thunderbolt Mill and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of five cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twelfth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth (30th) day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.
Office, Stevenson Building, San Francisco, Cal. jy10

White Cloud Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of Stockholders of the White Cloud Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 2 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.
Office, No. 16 Stevenson Building, corner of Montgomery and California streets.
San Francisco, July 1, 1869. jy3

Yosemite Mining Company, Humboldt County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of July, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco.

Any stock upon which said assessment shall remain unpaid on the seventh day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-fourth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary *pro tem.*
Office, No. 220 Clay street, San Francisco. jy10

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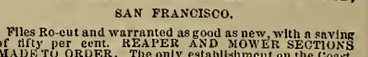

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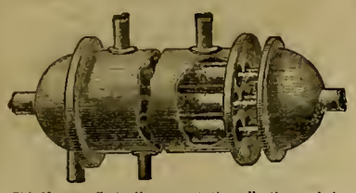

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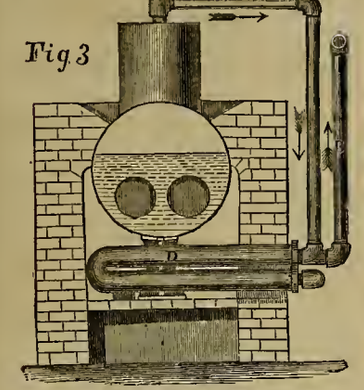

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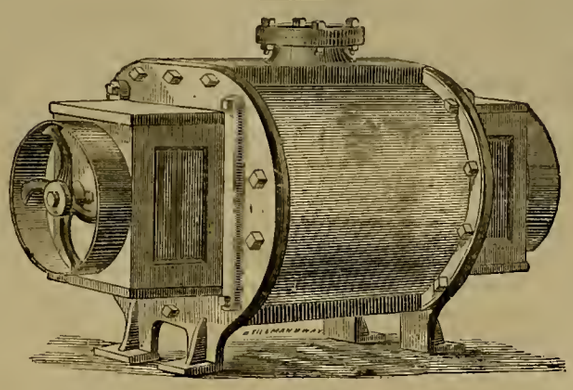
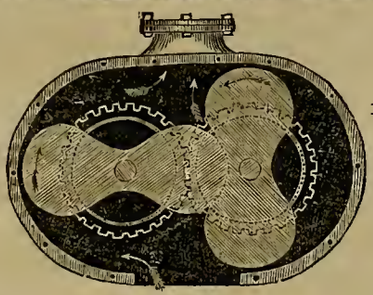
Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 21, 1868; and Oct. 6, 1868.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



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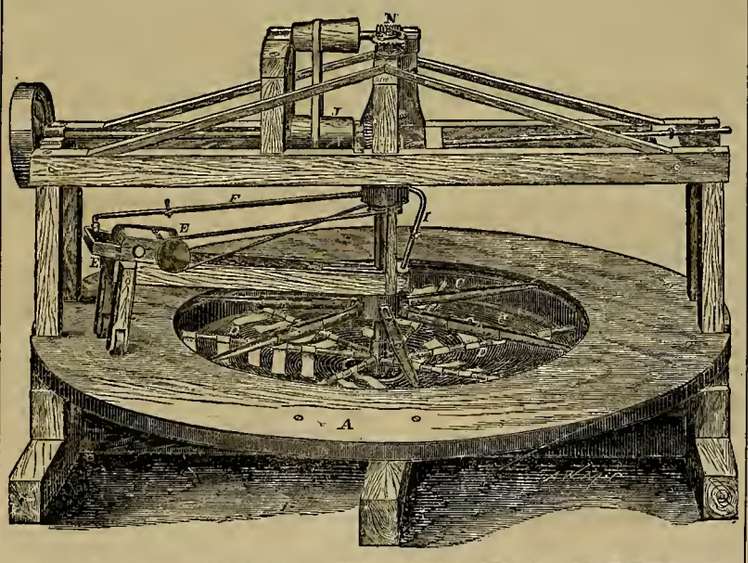

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13v1ceow

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In addition to American patents we secure, with the assistance of co-operative agents, claims in all foreign countries which grant patents, including Great Britain, France, Belgium, the Netherlands, Prussia, Anstria, Russia, Spain, British India, Saxony, Sardinia, Norway, Sweden, Mexico, Victoria, Baden, Bavaria, Holland, Denmark, Italy, Portugal, Cuba, Roman States, British India, Wirtemburg, New Zealand, New South Wales, Queensland, Tasmania, Brazil, New Granada, Chile, Argentine Repnblic, AND EVERY COUNTRY IN THE WORLD where patents are obtainable.

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We *can and do* get foreign patents for inventors in the Pacific States from two to six months (according to the location of the country) SOONER than any other agents.

Many valuable and important inventions of Americans are being yearly surreptitously patented in foreign countries, some of which governments allow it, thus deharring those who bave valuahle inventions from their rights.

Re-Issues.

When, through "inadvertence, accident, or mistake," an *insufficient* or *defective* patent has heen issued, the defects in the Specification and Claims can be remedied by a *re-issue*. In order to ohtain this, the inventor, or the holders of the patent, must snrrender the patent, and file an amended specification and drawings, and a statement specifying the ground for asking for a re-issne. Re-issues are generally applied for after it has hcen found that the patent could not withstand litigation. It is, therefore, especially desirahle that the new Specification and Claims should he prepared with great care and skill. Terms liberal in these cases.

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A caveat is a description of the invention designed to he patented, lodged in the Patent Office before the patent is applied for, and while the inventor is perfecting his design. When *properly* made, it operates as a har to applications respecting the same invention from any other quarter; but when improperly done, it is inoperative hy reason of such defect. The Patent Office always returns a receipt for caveat papers, hnt does not seek to point out its incorrectness, unless there be some glaring defect.

Our fees for filing caveats are from $20 to $25. This covers the entire expense, including Government fee.

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We have the only complete set of U. S. Patent Office Reports (from 1844) on this coast; a full record of all patents issued since 1790; Record of British patents from 1801, and full files of scientific papers containing illustrations and list of U. S. Patent Claims; Illnstrated Mechanical, Philosophical, and Law Books and Reports, of the very highest authority, forming the only extensive library of patent works west of the Rocky Mountains. We offer patentees and inventors the free use of these hooks at our office. The files of the MINING AND SCIENTIFIC PRESS contain the claims of the Pacific Coast Patents, and many illustrated descriptions of the same. We have also in our office *full copies* of a large majority of the patent cases emanating on the Pacific Coast.

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DEWEY & CO.,
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THE SUN-SPOTS ARE DEPRESSIONS.—Messrs. De La Rue, Stewart and Loewy, who have made numerous observations at Kew, consider that the sun-spots are cavities and at a lower level than the sun's photosphere. A spot observed on May 7th, in disappearing produced indentations in the west limb in two successive photograms. They prove that such indentations must under all circumstances be very rare occurrences.

"TIDAL WAVE" OFFICE, SILVER CITY, IDAHO TERRITORY, July 18th, 1869.

MESSRS. DEWEY & CO., *Patent Agents:*—Much obliged for the efficient manner in which you have conducted our business, etc. Yours, etc., JNO. S. BUTLER.

MINING AND SCIENTIFIC PRESS.—We are pleased to see that the proprietors of this valuable paper are taking active measures to increase their circulation in this State, for we are satisfied, from our own knowledge of the paper, that the more widely it is circulated the more understandingly will mining be conducted.—*Territoria Enterprise.*

AADRESS WANTED.—We are desirous of communicating with Allen Oliver, lately of Jamestown, Tuolumne County, California. tf

RETURNED.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17 4m

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Melter and Refiner, U. S. B. Mint.

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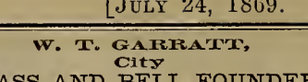

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BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, JULY 31, 1869. VOLUME XIX. Number 5.

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Foundry Work—Mining Machinery for Japan.

Notwithstaading the dull times, and scarcity of money, which is operatiag so disastrously with one or two of our foundries and with husiaess operations, generally, throughout tho city, we notice coneiderable activity in most of the shops, oae of which, the Vulcan, has just completed an order of a most interesting and suggestive character—nothiug more nor less than a completo quartz mill for Japan. Who can eay after this that the Japanese are not progreesiag? The Vulcan Foundry has just shipped a 10-stamp mill with amalgamating appliances complete. The motive power will be a large overshot wheel, which the Japanese are now buildiag, tbemselves, at tho mine. The process to be employed is a dry one. The ore, after leaving the hatteries will be further reduced in amalgamating barrels, of which fivo are furnished, weighiag 1,175 pouads each. The battery is a most suhstantial oac, with iron columas and head pieces; iroa beiag used everywhere so far as practicable. The machiaery was all set up and proved before beiag shipped. The two hatteries, of five etamps each, weigh ahout ten tons. The weight of tbe eatire shipment is about thirty-five tons.

During the week, tbe Risdon Iron and Loccmotive Works have shipped, for Virginia City, a numher of ore cars for the Virgiaia and Truckee Railroad Company, wbich road is now nearly complete. The boxes of these cars are built of one-sixth inch boiler iron; haviag doors in the bottom through which to dump the ore.

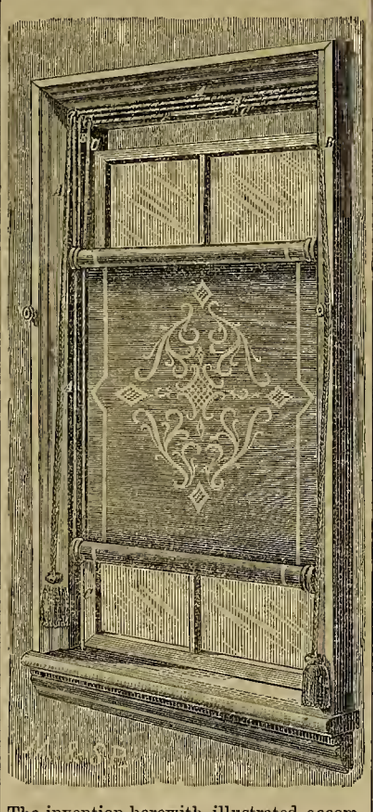
A large amount of machinery has also gone forward within a few days for the Coasolidated Chloride Co. of Hamilton, White Pine, Nev.

PENSION AGENCY.—Mr. H. C. Bennett, of this city, who was some time since appointed Government Ponsion Agent for this coast, has received bis commission, and estahlished his office over Loomis' newspaper depot, corner of Washington aad Sansome streets, whero he is prepared to pay those eutitled to receive pensions in eitber the Army or Navy Departmeut. The establishment of such an agency on this coast will be fouad a great conveaience to those intcrested.

Tay's New Device for Hanging Window Shades.

We give herewith an illustration of an improved device for hangiag wiudow shades, whereby a certain arrangemeat of cords, rollers and weigbts, enables a person to roll a curtaia down from the top or up from the bottom, as may be desired, and so that either the top or bottom of the curtain may he made to remain at aay desirod position on the wiadow.

Maay people have long felt the necessity for some practical aad easily managed device by which light and air may be admitted into a room from eitber the top or bottom of a window, or hoth, as may be desired.



The invention herewith illustrated accomplishes this, and most admirably. By simply toucbing witb a slight lift or pull the weighted tassel upon tbe rigbt, tbe upper portion of the curtain may be lowered or raised, aud will be held in any desired position hy tho weight and couater-balance of tbe tassel. The lower portion of the curtain may be manipulated in the same manner by handliag the tassel upon the lcft. No *fastening* of the cord is required after it is once adjusted.

By this arrangement there is no blowiag in or blowing out of tho curtain in consequence of the loweriug or raising of a window sash. The entire curtain may be placed directly opposite the portion of the window occupied by the sash; or it may all be rolled up and snugly placed at the top. A curtain is here presented which is perfectly adapted to every possihlo want of such a conveaience; not suhject to deraagement of its manipulatiag cords, and entirely free from unpleasaat thrashiag and blowing to which all ordinary curtains are subject. It is applicahle to auy kind of curtaia material, is so eimplo as to be easily manipulated by aay child, and is no moro costly than most of the styles of fastenings in general use.

Although the patentee has not yet offered the fixtures for sale publicly, he has reccived several orders for public and private huildings from various parties who are very desirous of obtaining them, and who seem to repeat the saying, "we can't keep house without them."

Further information may be obtained at tbis office, or on application to the iavontor, Mr. John I. Tay, Oakland, Cal. Tbis important invention has recently heen patented through the MINING AND SCIENTIFIO PRESS PATENT AGENCY, aud is well worth the attention of manufacturers, housekeepers, and all persons engaged in finishing or refurnisbing dwellings or houses of any descriptioa. It may readily he substituted for aay curtain now in use.

PERSONAL.—We understand that Prof. George J. Brush, of tbe Sheffield Scientific School of Mines of Yale College, is about to start on a tour of observation through tbe mines and metallurgical works of Colorado, Nevada and California. Prof. Brush has probably done more than any other man connected witb the faculty of that institution to make it what it is—the foremost scientific school in America. In connection witb his associates, he has been doing honest, solid work in huilding up a school for the benefit of the whole country. We are pleased to learn that he is coming to look at our miaes and our various leading iadustrial establishments. Such observations will no doubt give him a more appreciative idea of our resources and industrial wealth, and enable him to more fully and faithfully represent us in tbe world of letters and industry at the East.

GROWTH OF CHICAGO.—Chicago has now a population of 300,000, and does more business than any European city with twice that number of iahabitaats. Less than oae-third of the territory directly dependent upon that city is yet cultivated, and the iacrease in the cultivation of that now occupicd will eveutnally be greatly increased by closer and more improved farmiag; so that the opportunities for the future growth of Chicago, based alone upon the agricultural resources of its dependencies, is almost beyond computation. Nothing nced bo said of the immense results which must come froa the great and growing manufacturiug interests of the Great West. Chicago is and must ever he on the lino of the great iron highway between San Francisco and New York, and must, moreover, be the chief central radiating poiat of that highway of nations. She is now, aud will ever remain, tbe queen city of the great iaterior hasin of tbe North American Contineat.

Burning Harvesters.

Au improved harvester was invented eome timo since hy Mr. John M. Horaer, of Mission San Jose, by which a great saviag of labor is effected. This harvestor cuts, thrashes, and sacks the graia, at one operation. Three of these machines have been actively eagaged in the field, this season, against the best class of reapers, headers aad steam thrasbers ia tbe State. It ie said that they have demonstrated to the most critical observers that they are fully able to accomplish all that has been claimed for them. Sixteen acres can be harvested by tbis machine in one day.

This success, which it was thougbt would have heen hailed by all men with delight, seems to have produced quite a different feeling upon the hands engaged in farm work in the vicinity; and various threats were thrown out to the effect that such machines should not be allowed to work, etc., because they interfered with the demand for labor. But little attention, however, was given to such threats until the 14th instant, when one of the machincs was coneumed in the night, and under circumstances which rondered it all but couclusive that it must have heen set on fire by somo of the parties who had heen tbreatening or prophesying violence. It is to be hoped that the parties who could be guilty of such an act may be found aad punished, in order that villainy may have its reward and tbe iunocent be freed from suspicion.

Such acts, taken in coanection with the late high-handed proceediags in San José, Grass Valley and Wbite Pine, may well set sober men to thiaking upoa what evil times we may bave fallen. When men are banding together to subvert the principles of justice and right, or when men are forming associations whose influence leads directly and naturally to such results, is it aot time that those whose lives and property are thus jeopardized should take some nnited action to protect themselves against eucb attacks?

STRANGE OVERSIGHT.—The Grass Valley *Union* very properly alludes to tbe fact that of all the sigbt-seeing by our Chicago aad other friends, who are now visiting the Pacific Coast, to examiae and ascertain its resources, not oae has yet visited the mines of tbat place. This oversight is certaialy remarkable, especially when they all pass witbin ten miles of tbe town, in wbich are located some of the most extensive gold mines in the world. Not to see Grass Valley, is to overlook ono of tbe most remarkable and important localities in California.

VALUE OF SAFETY CAGES.—Two or three cables connected with the hoisting apparatus in the Virginia City miaes, have broken within a few weeks, but without any furtber damage than tbe mere partiag of the ropes; as safety cages were used ia each case, which arrested the fall of the same almost instaatly. Had it not been for such an arrangement, in oao case at least, serious loss of life must have eusued.

Communications.

An Interesting Ore Deposit in Plumas County.

[Written for the Mining and Scientific Press.]

Editors Press :—One who has spent all the years of his manhood in Plumas county—most of the time for twenty years as a practical miner—and who desires to see that county emerge from the cloud under which she has been laboring for some years, owing to her lack of energy, hopes that the following description of a mine in this county may arrest the attention of some of those who look upon this branch of industry not only as a source of profit but also as a science. This mine, in which I have no personal interest, is located at the head of Greenhorn Gulch, a feeder of Spring Garden creek, which empties into the east branch of the North Fork of Feather river just below the point where Spring Garden creek and Spanish creek emerge from the American Valley into the cañon.

Early miners in Plumas will remember Greenhorn Gulch, lying on the south slope of the mountain, the Spring Garden Ranch and Grizzly Valley—on the old emigrant road—and others may be more familiar with it by describing it as being a mile or so above the mouth of the old "North American" tunnel, on Spring Garden creek, which mine set all the county agog with astonishment at the wonderful promises made by Mr. J. R. Sproul, whose residence in San Francisco has proven that his hallucination on that subject was owing more to a disordered state of mind than an intention to deceive.

At the very head of Greenhorn Gulch there has long been much prospecting, from the fact that that creek itself paid so rich in the early days; and it is only now, when the hillside has been thoroughly prospected and laid bare in spots for a distance of over 4,000 feet, that the secret of its richness has been discovered.

Standing in the gulch, with your back to the east, you see a semi-circular hill rising at an angle of about 30°. Directly in front is a prospecting cut; but you see none of the signs sought for by the miner, except thin veins and strata of decomposed quartz—which you will find increasing in size and quantity as you travel from the left to the right—and at intervals of four hundred or five hundred yards you will find the hill prospected, not only to the bedrock, but also down into it for forty feet or more—the dirt and rock having paid thus far at the rate of about $20 per day to the hand. But on examination it is found that what they term bedrock is filled with sulphurets, which (rock and sulphurets pounded together) assays from $7 to $20 per ton. This rock is as easily worked as so much gravel; still immense masses of it have been carried away, until they have become satisfied that they send down in the uncrushed rock, through their sluices, infinitely more gold than they save. Millions of tons have thus been swept away down the creek. Latterly a dam has been constructed, which has already saved about 2,000 tons, with a capacity for a million.

These thin seams of quartz, varying in width from an inch to a foot, all dip into the hill, on the right-hand side of the semi-circle, where they seem to unite in the mother vein, upon which they have sunk only about seventy-five feet, but with splendid prospects, developing a vein over five feet in width. The main vein runs south 15° east and north 12° west; and a compass laid upon it in its direction of length cuts directly across the Eureka and Mammoth lodes, on Jamison creek, Plumas county, and also the mines known as the Sierra Buttes, in Sierra county.

The mystery of this claim is the immense deposit of gold in the bedrock, which the miners here call talcose slate, but which is not what used to be called talcose slate on Oregon Cañon, and on Cañon creek in El Dorado county, nor on Deer creek in Nevada county. It is more like a porphyritic formation—yellow, greasy to the touch, and somewhat laminated, like slate, yet filled with innumerable sulphurets, which are undoubtedly gold-bearing.

Enough of the ground has been prospected to show that there is at least a half mile in length, with a width of 4,000 feet, which will pay immensely by hydraulicing process, to say nothing of the immense wastage in the rock which goes through unbroken. There is ground enough already discovered to employ 200 men twenty years on the surface, and wealth untold to an unknown depth.

The mine is known as the Freeman and Heath claims, 2,000 feet, and from their line to the eastward it is known as the Krusely and Dneder claims, worked at present by Messrs. Kelly and Archer. A plentiful supply of water—over 500 inches—the year round, can be had. We call the attention of capitalists and mining experts to this, as an anomaly in all mining heretofore known in California. If there is any certainty in the judgment of the value, by the prospects already done, it is certain to be as valuable as any of the hydraulic claims in this State, and will richly reward those who add to their capital a little energy and mining sense. Forty-niner.

Quincy, Plumas Co., July 5, 1869.

Let the Inventor be Protected.

"Nothing is more common, on the publication of a new discovery or invention, than to express surprise that it was not thought of before. Yet thousands of clever men had gone on, generation after generation, in the industry to which the invention applies, without having once thought of it, or, having possibly thought, reduced it to practice. * * * The theory is maintained by those opposed to patents that, for every successful invention, a number of inventors were on the road, each of whom would certainly have reached it in time. They speak of the common laws of nature, and natural principles common to all, as if there were any pretense that these were, or had ever been, considered as subjects for patents. The idea that a single broad field for improvement, which had existed and been recognized for generations, should almost at once, or within say one, two, or five years, engage the attention with a like result of perhaps half-a-dozen or a dozen independent and really competent inventors, is sufficiently improbable on its face, and is only matched by the piece of pure assumption which asserts it as a fact. The assumption is not so much in the notion that a number of inventors may have applied themselves all at once to the same subject, but in the notion that all would be successful, and, still further, that all would accomplish the same end by the same means. There is nothing to argue upon in such a statement. It possesses neither proof nor probability and that is all that can be said of it. * *

Genuine and useful invention, so far from being obvious at first sight, is much more commonly treated with doubt, and sometimes with ridicule. The thing which it is pretended almost any one might have invented, is generally contemptuously received by the great aggregate inventive talent which is supposed to have been all along so full of the same idea. * * So far from voluntarily adopting the more important inventions at first, experience has shown that in by far the greater number of cases the public require much canvassing and persuasion to induce them to take up an invention at all until its success has become well and widely known."—*Engineering.*

The Age of Paper.—The invention of paper collars and paper bonnets seems to have opened up a world of discovery. It has fairly inaugurated an age of paper. The cheating cups of the restaurants led to the invention of coffee-proof paper cups of honest capacity. Some Yankee is now making them. They fold up, and are carried in the pocket. They are so cheap that after once using they may be thrown away. Hats are made of paper on similar principles; and we hear of paper stockings. Ladies' skirts are now made of paper, and sold for sixpence, in England. School globes, on account of their rotundity, would be thought incapable of close packing, but they are pocketable now. A Vermont genius is making them of tough paper, so that they fold up into small compass. They have internal steel springs, which open out, and in an instant present a perfect geographical globe. By and by some daring inventive genius will devise a paper Avitor, and steam away in it to the uttermost parts of the earth.

Molasses in Bulk.—The Boston schooner Novelty, built with iron tanks for carrying molasses in bulk, has recently arrived from Cuba on her first trip. The experiment was a most successful one, saving on the cargo of 84,000 gallons $2,000.

Familiar Science.

Telescopes and Telescopic Vision.

A good telescope, with a three and a half-inch aperture, virtually brings the moon within 1,200 miles of the observer. Lord Rosse's telescope brings it within 42 miles, so that objects 270 feet long are discernible. An instrument of ten times the power of Rosse's would bring the moon within a mile, at which distance the body of a man might be perceived, and a large building very minutely examined, and its exterior described.

Some of our readers may be curious to know why it is, if we can bring objects upon the moon to within a range of 42 miles, they cannot, by increase of telescopic power, be brought within one mile. The difficulty in the way is the enormous augmentation of power which would be necessary. It would require at least *ten times* the power of the Rosse instrument to bring the moon 40 miles nearer the earth than it can now be brought; moreover, this very increase of power defeats one of the requisite conditions to the end desired—clearness of observation. The vibratory motions caused by radiated and reflected solar heat, and the mechanical impurities suspended in the atmosphere of the earth, are all hindrances to clear observation; and the higher the power employed, the more formidable these hindrances become. These obstacles will undoubtedly be, at least in part, removed; but *how*, it is difficult at present to understand.

Preservative Properties of Whitewash.—Sheet iron of any kind, if covered with a thick whitewash of pure lime, will not rust, though exposed to weather however damp. Gas and water pipe, thus whitewashed and remaining under ground for years, has been found to be entirely free from corrosion. It is said that peaches and pears, which under ordinary circumstances would decay in three or four days, when thus coated may be kept for as many weeks. The wash may be easily removed without any injury to the fruit. Where it is especially desirable to keep choice and perishable fruit for the time mentioned, such a method of preservation might be found of much value.

How to Soften Sponge.—The sponge, when first taken from the rocks, consists of a heavy, black-looking mass, with a very offensive odor, and seemingly anything but that which can be changed to a useful and cleanly substance. In order to remove the impurities, it is first buried in the earth for two or three weeks, at the end of which time the organic matter will then have become decomposed, and most of the effluvia will be removed. By a little washing it can now be made clean and soft—a pure fibrous skeleton. To prevent its becoming hard and rough to the touch, immerse it for a few moments in warm water, containing from ten to twenty per cent. of glycerine; after which, when squeezed dry, it will be found soft and elastic.

Why do we Oil our Whetstones.—We oil our whetstones for several reasons. The first is, that almost all stones, unless oiled, become glazed or burnished on the surface, so that they no longer abrade the metal. The second reason is, that most stones, after being oiled, give a finer edge than they do in a dry or merely wet state. The pores of the stone become in a measure filled up, and while the action is rendered continuous, its character is altered. A dry stone is very apt to give a wire-edge to a tool, and although this sometimes happens when oil is used, yet it does not occur nearly so often. Some stones work better with water than oil.

It has been said that a little carbolic acid dissolved in the water which is used to moisten a whetstone, or a grindstone, will greatly increase the friction, and thus promote the action of the stone upon the steel instrument. If this be true, and there be no unforeseen drawback, carbolic acid will prove invaluable to all who have to sharpen tools or grind metallic surfaces.

How to Detect Escaping Gas.

We last week gave full instructions for reading gas meters, so that every consumer may be able to ascertain from his own knowledge, the amount of gas which he is using. We now give, from the same source—the N. Y. Gas Light *Journal*—some hints of the manner in which one should proceed to detect escaping gas:

If your gas bills seem too high, or you have the evidence of escaping gas by sense of smell, but not positively so, take a reading of the meter when no burners are in use, and after an hour or so repeat the reading, and if the gas is escaping it will be shown. To detect the locality of the leak is often a more difficult matter. The first thing is to see that no burners have been left turned on by accident, which is often the case where the cock has no *stop*, and is caused by the cock being turned partially round again so as to open the vent. Imperfect stop cocks are for this reason dangerous, and should be at once removed.

The next thing to do in order to detect a leak is to try the joints of the gas fittings. The sense of smell will frequently be sufficient by bringing the face near the suspected joint; a lighted taper or match held near the joint is a more certain plan. If gas is escaping it will take fire at the leak, or if too little to burn steadily it will momentarily catch and extinguish in little puffs.

Sometimes the gas escapes from the joints or imperfect piping between the ceiling and floor, or behind the walls or casings.

If beneath the floor the sense of smell will generally detect the section of the floor under which the leak is: as it escapes owing to its levity upwards through the crevices of the floor, and penetrates the carpet if there be one. If bracket or side burners are used, and the escaping gas is behind the walls or casings, the crevices in the casings, or the opening when the pipe enters the room, will let the escaping gas enter the room sufficiently at these points to indicate somewhat nearly the location of the leak.

In such cases the proper course is *never* to apply a light to the crevices or casings, but to turn off the gas at the meter and send for a gasfitter, otherwise an explosion may occur involving serious consequences. In ordinary leaks of gas fixtures and pipes, whether at the joints or at the attachment of the burner, the fitting or burner should be unscrewed and white lead or common bar soap rubbed in the threads, and then screwed home again. This can be done often without any aid from a gasfitter.

Sunstroke.—Sunstroke, like hydrophobia, is always a doubtful subject as to what it really is, and how caused. The forms of medical treatment in the case of sunstroke are as varied as the theories advanced of the character of the malady. Says the N. Y. *Mining Journal.*

In England, such cases are considered as arising from direct over-heating of the blood, and treated accordingly. At home doctors consider it a poisoning of the blood, and follow a treatment analogous to that in snake poisoning. Indian doctors believe that sunstroke is occasioned by the direct action of the sun's rays upon the hair, or perhaps upon the *medulla oblongata.* But how is this effect caused? What rays of the sun thus affect? It cannot be illuminating rays, nor can it be the heat—for firemen, puddlers, glass-blowers, etc., endure much greater heat, and at still greater disadvantage. But in the solar rays we have the "actinic" or chemical rays, and it is the actinic which acts most powerfully on organic nature, and the actinic rays are surpassingly energetic in the tropics.

The Aurora and the Telegraph.—The electric currents produced in telegraph wires by the Aurora Borealis has been estimated by Latimer Clark, an English electrician, to be equal to that produced by many hundred battery cells. Mr. Varley, of the Atlantic Telegraph Company, measured some currents between London and Ipswich in the fall of 1866, which required a current from 140 Daniell cells to neutralize them.

Never enter a sick-room in a state of perspiration, as the moment you become cool your pores absorb. Do not approach contagious disease with an empty stomach, nor sit between the sick and the fire, because the heat attracts the vapor. Preventives are preferable to pills or powders.

Mechanical Progress.

The Spiral Pump.

Wilfrid Airy, a son of the English Astronomer Royal, and a mathematician and mechanician of high standing, has published a work upon this machine, which is reviewed and illustrated by *Engineering*. That journal pays a high compliment to Mr. Airy in saying that one reason why this remarkable machine,—which was invented more than a century ago, yet of which only four working specimens have ever been constructed,—has made so little progress, is, "that the theoretical investigation of the principle involved is of a very complicated nature. It adds, that Mr. Airy has evidently made himself master of it.

The pump is thus constructed:

"A metal pipe is coiled round a cylindrical or conical drum, which is placed with its axis horizontal; this drum is carried by means of two axial pivots; one, a solid gudgeon running in fixed blocks, and carrying on its end a crank, by means of which the drum can be turned; the other, a strong pipe leading into the curved end of an upright pipe, in which it turns by means of a water-tight joint; one end of the metal pipe on the drum is left open on the drum, while the other end is led into the side of the horizontal pipe gudgeon above described, and soldered to it at the joint."

If the machine be erected at the surface of a reservoir of water, and so placed that the drum is more or less immersed, then, as the drum is turned, the open end of the pipe that is coiled on the drum takes in a portion of air and a portion of water at every revolution; and when the drum has been turned as many times as there are coils of the pipe upon it, then the pipe is full of these fluids in regular order, the water in each coil lying at the bottom of the coil, and the air at the top (the quantity of each depending upon the depth of immersion of the drum). If now the drum be still turned, the water and air in the last coil are discharged into the horizontal pipe gudgeon of the machine, and by it into the vertical pipe; and at every additional turn of the drum an additional discharge of air and water takes place into the vertical pipe.

An ingenious and beautiful application of the principle is made by substituting mercury for the air. "By means of a very small quantity of the mercury, made to circulate through the coils, a continued stream of water is lifted to a considerable hight."

The advantages of this apparatus,—says Mr. Airy,—are numerous and important. Its chief recommendation lies in the simplicity of its action, and the fewness of its parts; there are no sliding valves or other moving pieces liable to expensive repairs, and the one water-tight joint is simple, safe, and easily renewed without skilled labor. The friction may be reduced to a very small amount, for since the drum is always more or less immersed, it will be proper to make the drum hollow and water-tight, so that by proper adjustment of its size, weight, etc., it shall float in the reservoir without bearing at all on the gudgeons.

CEMENT FOR STEAM JOINTS.—A book to be shortly published by Van Nostrand, of New York, has the following receipt for a steam-joint cement, long used in France, and said to excel all others:—"Take white lead, ground in oil, a sufficient quantity. Add dry red lead enough to make a stiff putty. Put the mass in a mortar or on a block of iron or smooth stone, and pound it till it becomes soft; continue to add red lead, and pound until the mass will no longer become softer by pounding, nor stick to the fingers. At this time it should be of sufficient tenacity to stretch out three or four inches when pulled, without parting. The more protracted the pounding, the softer, finer and more tenacious the cement becomes. Interpose this putty between the flanges of steam pipe joints, taking care to put a thin grummet of packing or wicking around the diameter of the bore, to keep the cement from squeezing through when the flanges are screwed together. It is indestructible by steam or water, and makes the best joint known to the engineer."

Progress in Marine Engine Construction.

We condense the following from *Engineering:*

The grand old side-lever engines of twenty years ago, or for that matter ten years ago, are fast becoming curiosities possessing a high degree of archæological interest. It will probably not be long before the 100-in. cylinder, 12-ft. stroke engines of the Scotia, only finished in March, 1862, will be replaced by screw engines, as has been done already in the case of the Persia.

In 1847, there were many who disbelieved in the screw altogether, and its introduction into war ships was partly if not greatly due to the circumstance that the screw engine and propeller could be kept wholly beneath the water line, and that the deck was left clear for its whole length for armament. As for merchant steamers, it was long before steamship owners would listen to any arguments in favor of the screw.

With injection condensers, and the old forms of fire boilers, steam of more than 10 lb. per square inch was considered out of the question at sea; expansion was seldom practiced to any extent, and superheating was reckoned a costly and needless refinement, if, indeed, it had been thought of at all.

Marine engine improvement has consisted in doing just what twenty years ago was reckoned impracticable or inexpedient. The tubular boilers that were to give so much trouble by salting and leaking are now in universal use, and a flue boiler of 1850 would be reckoned a curiosity. The pressure of steam has been carried to 25 lbs. or 30 lbs. in regular work, while boats are worked to 50 lbs. The piston speed has been carried, as a maximum, to 600 ft., and even 650 ft. per minute. Superheating is now practiced with advantage and a good degree of expansion attained, in some cases with compound, or high and low pressure engines. Surface condensation, with all the cost, weight, and bulk of the tubes, and the difficulty, once encountered, of keeping them tight, as well as the danger, at one time so imminent, of corroding the boilers, is now a firmly established fact. Double-acting air pumps, making 75 double strokes, and 600 feet of bucket per minute, work as easily and silently as the old air pumps, worked, off the beam or side lever, at 80 ft. or 100 ft. with only 15 or 20 double strokes per minute. The dynamic performance of large screws of fine pitch is in all respects equal to the best results obtained from paddles, while the machinery required to drive it is far lighter.

"ROSSING" TAN-BARK.—The "ross" is the outer portion of the bark and is worthless for the tanner's purposes. The *liber*, or "meat," is the central portion. The *Hide and Leather Interest* says a new machine has been devised for separating these different parts of the bark; thereby not only saving the tanner the expense of transporting the ross, but also giving him a tan liquor which is improved in quality, it being freed from the gummy matter which that portion has heretofore contributed. The machine may be gauged to cut at any desired thickness. In the trial which was made, hemlock bark an inch and a half thick was used, being divided into three equal parts, viz: the inner, the central and the ross, or outer portion. Each of these was tested separately for tanning calf-skin. The first in about three weeks gave a leather well tanned and equal in color to that made of oak bark; the second, an article much darker and not quite half tanned; and the last, a product almost black and not tanned at all.

INDEPENDENT SAFETY VALVE.—The Pennsylvania Railroad has applied the new valve to all its engines. It is entirely out of reach of the engine driver, and lets off steam when the pressure rises to 120 pounds to the inch.

Scientific Progress.

Phosphorescence of Gases.

Some interesting experiments have been made by M. Sarrazin, a young French chemist, on the production of phosphorescence in gases by means of the electric spark. The gas to be experimented upon was introduced into a wide glass bell-jar, which was then exhausted of air to a certain pressure, and the charge then passed through it. Among simple gases, oxygen only is phosphorescent. A pale red light appears in the center of the vessel, surrounded by a beautiful greenish halo. This appearance is due to the production of ozone, since when one of the electrodes is sprinkled with powdered silver in order to absorb the ozone as fast as formed, the phosphorescence disappears. In the case of compound gases, those containing no oxygen are not phosphorescent, while those in which oxygen exists are so, the phosphorescence being due here also to the formation of ozone. The most striking effects are produced by nitrous oxide to which a little fuming sulphuric acid has been added, to increase the effect, by increasing the amount of ozone. Under these circumstances, the phosphorescence obtained is quite wonderful; the yellow gleam which remains after the electric discharge ceases, being sufficiently intense to illuminate a large hall.

Total Ultimate Refrigeration of the Earth.

The following is part of an article in the Yale *Courant*, by Prof. Alexander Winchell of the University of Michigan:

"Our earth is approaching a state of total refrigeration. Buffon asserted that this event would render its surface uninhabitable. Laplace, on the contrary, by proving that the sidereal day has not diminished perceptibly within twenty-five centuries, was thought to have proven that the earth has not undergone that shrinkage which the doctrine of gradual refrigeration requires. Poisson, while he demonstrated that heat is escaping from the earth, showed that the amount lost at Paris is only enough to elevate the temperature of a column of water eighteen inches high, one degree and a half. Vogt asserts that the existing temperature of the surface is but one-twelfth of a degree higher than it would be if the earth were cooled to the core. Pouillet states that the heat transmitted from the earth's molten interior is but one-fortieth of the amount received from the sun; while Fourier calculated that the same heat is only sufficient to melt a layer of ice ten feet thick in one hundred years. It may also be stated that Sir David Brewster, Sir William Thompson, Evan Hopkins and William Hopkins, have strenuously opposed the doctrine of internal heat, and these sentiments have been echoed, in America, in one form or another, by Messrs. Hunt, Shaler and Hall.

It is scientific to accept the admissions of such authorities as Pouillet, Poisson, Vogt, Herschel, Dana and Guyot, and argue from the assumption that the earth is gradually cooling. Nor are we wholly ignorant now of the means of explaining the anomaly presented by the constancy of the sidereal day; since the tide wave, actuated by the power of the moon, rolling around the earth in opposition to her diurnal motion, by friction against the shores and the standing waters opposes that motion. This retardation, it has been estimated, very precisely counterbalances, for the present, the acceleration which would be due to shrinkage, and thus preserves the uniformity in the length of the day.

* * * * *

Whatever may be the effect upon organic beings, of the ultimate cooling of the earth, the final exhaustion of the sun will dry up, irremediably, all sources of vegetable and animal activity.

However vast the time consumed in his cooling, the event is approaching with all the celerity and certainty which his power of radiation can effect. Planets and satellites which have sprung from his bosom have completed a history which, in the sun, we witness in actual progress. Our moon may be frozen to the core—our earth is a rigid shell enclosing the embers of an ancient fire—our sun is the residuum of a parent mass whose offspring populate the spaces of the solar system. His fires are still aglow because his mass is immensely greater than theirs. They are waning, however, according to the same law. While yet his store of light is inexhausted, and the lambent flames of burning hydrogen still leap from his disk, the lifetime of planets and satellites is passing. From age to age, the source of light and heat grows dimmer and feebler. There are intelligences who will gaze upon our orb a cold and blackened mass. It may be after the lapse of millions of years, but it will yet be in the morning of eternity.

What though a meteoric hail pelt the sun from every quarter, and excite his heat to renewed activity for a few thousands of years! Whence this shower of cosmical matter? It is not an infinite resource. It can only serve to postpone the reign of darkness and of universal winter—as friction may perpetuate for a few brief moments, the vital warmth of a dying man.

* * * * *

There was a time when the world was suited to nothing higher than molluscan and crustacean life. At another stage ichthyic organization and consciousness was summoned into being; then reptilian life; then mammalian; later, the life of an intelligence possessed of a moral consciousness and immortal hope. When we shall have utilized the passing phase of matter, progress will still rush onward in the same direction. The freezing globe will roll cold and lifeless about a frozen, blackened sun; and while, in some region of the universe, intelligences will still reside, our system will become an ancient wreck."

A NEW FOSSIL.—In the June number of the *Geological Magazine* is a description of a very interesting fossil discovered by Mr. Henry Johnson. Professor Woodward, F. G. S. F. Z. S., etc., of the British Museum, has undertaken the duty of figuring, describing and naming this fossil. He has pronounced it a new *genus*, and has given it the name of *eucladia Johnsoni*, a new silurian star fish (from *eu*, beautiful, *klados*, branch). Professor Woodward says:—"The specimen exhibits the ventral surface of the body of the animal, surrounded by five bifurcating arms, each furnished with five pairs of stout pinnæ. The center of the body of the animal is marked by a rosette, composed of five pairs of plates, forming a pentagonal figure, each pair being anchylosed together, and forming at the outer margin a rounded lobe,—like the petal of a flower." He adds, "We have in this fossil presented to us a type of palæozoic star-fishes extending its affinities toward *comatulæ* on the one hand and to *ophiura* and *euryalus* on the other, exemplifying what Professor Owen has termed 'a more generalized type of structure than any at present existing in the class *echinodermata*.'"

SIMULTANEOUS TELEGRAPHING IN OPPOSITE DIRECTIONS.—The London *Telegraphic Journal* describes the method devised by Dr. Gintl whereby messages may be sent in both directions at once on the same wire. Without a diagram it is impossible to explain it with distinctness; but we may say that it is the electro-magnet of the *receiving* station only, that is operated by the current,—that of the *transmitting* station does not work. The writing at either of the respective places is done by its own battery, but depends upon the closing of the key at the other.

COLORATION OF THE ELECTRIC SPARK.—Becquerel has shown that the spark may be beautifully colored by being made to pass through saline solutions. If a spark from an inductive apparatus be made to pass into the extremity of a platinum wire suspended over the surface of the solution of a salt, this spark will acquire special coloration according to the chemical composition of the solution traversed. The saline solutions are best concentrated, and the platinum wire positive. The experiment is performed in a glass tube. Salts of strontia will color the spark red; chloride of sodium yellow; chloride of copper bluish green, etc.

Farming and Gardening.

Insects Injurious to Wheat.

We called attention last week to the appearance of two species of insects, injurious to wheat, which have made their appearance this season in California—one in Santa Cruz county, which had attacked the stalk, and another in Alameda county, which had attacked the roots of the plants. It may not be without profit, at this time, to make a more full notice of what we suppose these insects to be, their habits, and the methods to be employed for their extermination.

Root Worms.

The insect alluded to as infesting the roots of the wheat in Alameda county is probably the *cataphagus lineatus* of the naturalist. There are many species of this troublesome vermin, most of which are known as wire worms, from the cylindrical shape of their bodies and the tough, horny nature of their coverings. When full grown, the one named is about three-quarters of an inch in length, of a yellow color, except about the head, which is brown. The body is divided into twelve segments, and has six feet. The pupa, into which it changes, is white. The perfect insect is a bug, with a horny covering. This insect deposits its eggs near the surface of the ground, where it remains, living upon the roots of whatever plants it may find, until its final change; after which it is usually found creeping among the herbage, seldom venturing upon the wing.

The Wheat-Stem Fly.

There are quite a number of insects which infest the stem of the wheat, and which should always be carefully looked after. One, the *Chlorops pumilionis*, produces a dwarfing effect upon the plant which it attacks. The central shoot being injured, the plant throws out lateral branches below the point of injury. This insect very much resembles the common house fly. Its color is black, with a little pale yellow under the body; the legs ashy gray, but black at the tips. The maggot which it produces, and which does the mischief is white—in its pupa state, yellow, smooth and shining, and about one-twelfth of an inch in length. This is known as the wheat-stem fly. It is, no doubt, either this or one of the two which we shall next mention, that has made its appearance in Santa Cruz county, as noticed in our last issue, from the *Pajaronian*.

Gall Flies—The Joint-Worm.

Gall flies are mostly long, delicate, slender-bodied insects, and covered with long hairs. There are several which attack the stalks of the cereals, in which the female lays her eggs, although they are sometimes deposited on the leaves or buds of various plants. One of the most destructive of this class is the *Isosoma hordei*, or "joint worm." The maggot of this fly is of a pale yellow color, with the exception of the jaws, which are dark brown. The egg from which it comes is deposited just above a joint, near the ground,—hence the name. A number of eggs are usually deposited near the same joint, and little elongated blister swellings soon make their appearance, beneath which, in little cells, the maggots are hatched, and feed upon the juices of the plant. In addition to what is needed for food, a large extra amount is also stopped in its progress to form the abnormal woody enlargement or swelling. When five or six eggs are thus deposited about a joint, a large portion of the sap of the plant is there absorbed, and the grain, thus robbed of its nourishment, suffers as a matter of course, both in bulk and numbers. This fly, in depositing its eggs, places the top of its ovipositor upon the stalk or stem, and gradually works it down into the same, so that the deposit is made *under* the skin—one egg in each place.

The first brood of the joint-worm fly, for the season, usually makes its appearance, in the Eastern States, about the middle of June. After coupling, the female lays her eggs, and a small percentage pass, by some inexplicable law of nature, rapidly through the pupa to the insect form; but the great bulk of the larvæ remain in the cells until the succeeding spring. *This* is an important matter for consideration, as will be hereinafter shown.

The Hessian Fly.

The wheat midge, or Hessian fly, although belonging to the family of gall-flies, does not produce the enlargement above spoken of where the egg is deposited. If the farmers of Santa Cruz who are troubled with the "fly" spoken of by our Watsonville cotemporary, will carefully examine their wheat stalks, they will be able to determine whether or not they have the Hessian fly there, without examining the insect itself. This fly, the *Cecidomyia destructor* of the books, has two broods each year—in the spring and autumn. The female lays twenty or thirty eggs, not in the *stalk*, but in a crease or other convenient place *on the surface of a leaf*. They hatch out in three or four days, and the pale red larvæ crawls down inside the leaf, as close as possible to the joint. Here, head downwards, the insect imbibes the sap of the plant, by sucking it through the outer skin, until, by pressure between the leaf and stem, it gradually becomes imbedded in the latter.

The first appearance of the fly is soon after the wheat comes up, and from the pupæ of the previous year. These lay their eggs and disappear. The maggots from these eggs are mostly hatched, in New England, from June to July, and take the perfect form just before the grain is ripened; but a portion remain on the stubble till after harvest, and some retain the pupa state until the next spring, and then come forth as the spring brood. The fall brood is the most numerous.

When two or three of these maggots become firmly imbedded in the stalk, as above, they take up much of the nourishment of the plant, thereby greatly weakening it, and sometimes causing it to utterly wither and die.

Fig. 1.

Fig. 2.

We have endeavored to show, in the accompanying Figure 1, the appearance of the stalk of wheat after it has been attacked by the *Isosoma hordei*, which produces the joint-worm. The leaf has been stripped from the stem, so as to show the little elongated, blister-like swellings, produced by growth of the maggot from the egg which has been deposited beneath the skin of the plant. The little hole shown is the orifice through which a fly has escaped. From three to ten of these cells will usually be found close together, and generally just above the second or third joint from the ground.

Fig. 2 represents the appearance of the stalk from which the Hessian fly has escaped. As the maggot from which this insect comes does not live within, but upon the stem, the place from which it escapes is a mere indention, within the woody fiber of the stalk. Thus, by a careful examination, the observer may be able to tell whether he has been troubled with the one or the other of these insect pests. The mode of getting rid of them is alike in both cases; but the Hessian fly is the most troublesome and irrepressible of the two.

How to Get Rid of these Pests.

There is only one available mode of destroying them—by FIRE. By a careful perusal of what we have already written, it will be understood that when the harvest is over all the seed, so to speak, of the next year's product is snugly stowed away near the lower joints of the stubble, and comfortably housed for the winter between the leaf and the stem. Californians have a rare opportunity to get revenge for the past and take security for the future. In our dry climate, a fire may readily be made to pass slowly and without danger over a stubble field. If you burn every stalk, you will be sure to kill the pupæ of every one of these Hessian invaders. But you must induce your neigbbor to do likewise, or his spring crop of flies will invade your field also, and you will derive very little benefit from your labor. With the stubble you must also be careful to collect and burn all the chaff and straw.

But, says one, who has been examining his straw, I find the little cell-like protuberances mentioned, in my stubble, instead of the smooth straw, with only a slight depression where the pupæ of the Hessian fly may be supposed to have been resting; what am I to do to get rid of *my* enemy, the joint-worm. Do the same thing, my friend; it is the best thing you can do. Your enemy will either be found creeping about on the surface of the ground, for he can't fly half as well as Marriott's Avitor, or you may find him snugly stowed away for the winter, just below the surface. If he is on the ground, you will be sure to burn him up with the stubble; and if he is in his nest, you will most likely smother him or scorch him so that he will never trouble you again. It is the best you can do at all events. Soaking seed and such things may all be very well to aid in germination, but it won't do the first thing toward preventing the appearance of the fly, the worm or the rust. It will act merely as an aid to good cultivation.

Importance of Good Cultivation.

It is well known that both insects and fungi are more inclined to attack weak and sickly grain or other plants than that which is vigorous and healthy. Especially is this the case with fungi, such as rust, etc.; the reason for which we have already given in previous articles. There are many insects of the class under consideration which *never* attack a living plant. Hence the necessity of special efforts to secure good cultivation and vigorous growth, as one means of avoiding such annoyances. The reason why cereals upon new lands are more exempt from insects and rust than upon old, does not arise so much from the fact that the germs are wanting in the former case, as from the lack of the proper conditions for their production or growth. When the lands become "worn out," as we call it—when, from a neglect of proper care in dressing, the soil has become measurably exhausted of the peculiar chemical combinations which are most essential to vigorous plant growth, and the annual growth of grain has thereby become stunted, thin, and lacking in vigor—then, and not till then, is it that these pests make their appearance.

It is so wisely ordered by nature, that if her laws of proper conditions are kept up—that if we return to the soil in some other form that which we take away from it in the way of its natural productions—we need entertain no fear that nature will fail us in her annual yield. Her laws are immutable and just. The Hessian fly has doubtless its office in the wise orderings of Providence; but the destruction of the cereals, the natural food of man, is not one of its offices—it is simply one of the penalties attached to man's neglect. If all the wheat raised in a given region was allowed to decay on the spot where grown, and return its elements to fructify the succeeding year's crop, and so on perpetually, there would never be an increase of the Hessian fly beyond the number needed for the support of its numerous parasites, some of which live upon its egg—others relying for support upon its destruction in its semi-pupa state. So well known is this fact that some naturalists have suggested the encouragement of these parasites as exterminators of the fly. A better way, however, and one more nearly in accordance with the natural order of things, is to pursue the course above pointed out—destroy by fire the great bulk of the fly-producing larvæ, which your neglect has introduced, and trust to after good cultivation and the friendly aid of such number of parasites as nature may provide, to keep them down in the future. Intelligence, care and united effort is all that is needed to rid any country of all such vermin.

Sheep in the Tule Lands.

The tule lands of the State are coming more and more into notice and value. They will soon be looked upon, as they ever should have been, as the most productive of any which we possess. A correspondent of the *Times*, of this city, has shown that they may be, even in their unreclaimed and unimproved state, advantageously employed for sheep culture. All that is needed is, that there should be some small portion within or contiguous to every ranch, which shall be above the highest water, so as to be used as a place of refuge when the necessity exists. Where no such place is found naturally, cheap Chinese labor may soon prepare a spot, where animals may be herded during the short period of overflow and fed with hay or roots. Such is the common method of preparing sites for dwellings and villages in the valley of the Nile, where the overflows are quite as deep as on the tule banks of the Sacramento and San Joaquin. The correspondent above alluded to says:

Every one knows of the immense tule lands in the vicinity of Suisun, but very few know of their being used as pasturage for sheep; nor was it until about a year ago that the experiment was tried. At that time D. R. Pringle bethought himself of experimenting on sheep raising in the tule, and on making his ideas known to a few of his neighbors he was laughed at and told he "must be crazy." Nothing daunted, he procured about four hundred sheep and turned them into the tule. They throve much better than he expected, and in less than a year he had the pleasure of being the possessor of about six hundred sheep, being an increase of two hundred while in the tules.

HORSES FEET REQUIRE MOISTURE.—Nine-tenths of the diseases, says the Ohio *Farmer*, which happen to the hoofs and ankles of horses, are occasioned by standing on the dry plank floors of the stable. Many persons seem to think, from the way they keep their horses, that the foot of the horse was never made for moisture, and that, if possible, it would be beneficial if they had cowhide boots to put on every time they went out. Nature designed the foot for moist ground—the earth of the woods and valleys—at the same time that a covering was given to protect it from stones and stumps.

AGRICULTURAL MACHINERY.—The best evidence of the agricultural progress of the Pacific Coast is the increasing demand witnessed here for agricultural machinery. California will soon, if she does not already, go beyond any other State in the Union, in proportion to her agricultural products, in the employment of machinery for cultivating and harvesting her crops.

A HIGH-PRICED COW.—Mr. Geo. Frost, of West Newton, Mass., recently sold a Jersey cow to a Pennsylvania farmer for six hundred and fifty dollars.

PROLIFIC WHEAT.—A single grain of wheat in Boise Valley has produced one hundred and twenty stalks, bearing heads averaging thirty grains each.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, July 31, 1869.

City Stocks.

The market for miscellaneous securities has not acquired any activity since our last similar reference, and the transactions in local stocks have been upon a limited scale. Private sales to some extent have been effected, but the public offerings were small. We notice sales of Spring Valley Water stock at $63 62 and $63 25 per share. California Steam Navigation stock realized 56 per cent. Ninety shares of S. F. Gas stock were sold at $85 per share.

Mining Share Market.

We remark rather a quiet market during the early part of the present week, but at the close a much livelier feeling sprang up, producing increased sales at a generally improved price. As to the present condition of the Comstock Lode, it may be stated that many mines seem to have a more hopeful look, and that more satisfactory results are looked for in the future. White Pine stocks command the usual attention, and if anything offerings have increased at somewhat lessened prices.

HALE & NORCROSS—exhibits considerable improvement. During the week ending July 24th the ore product amounted to 781¾ tons, from the following localities: 175-level, 113¾ tons; 300-level, 58½; third station level, 25½; and fourth station level, 584¼ tons. During the same time 1,071½ tons were delivered to certain mills, leaving 1,635 tons on hand at the dumps. We learn nothing further with regard to the developments in this mine.

CHOLLAR-POTOSI—was in increased demand near the close of the week. For the week closing July 23d, 1,349 tons of ore were mined, and 1,430 forwarded to reduction mills. This yield came from the following localities: Blue Wing, 721 tons; New Tunnel, 444½; Grass Valley station and croppings, 183½ tons. The Blue Wing stope is reported as looking well and producing largely. The quantity of ore in sight is greater than at any period during the past two months. In the New Tunnel the quality continues good, but the supply is not so large as for some days past. On the 23d inst. $19,892 in bullion was shipped to the office in this city. The ore slip of the 26th states that seven mills were supplied with 196 tons of ore, in the aggregate, on that day.

CROWN POINT—is in better favor. The *Daily Herald* has a telegram, stating that "a strike in the Crown Point 1,000-foot level, east drift, is reported."——BELCHER was in moderate request. It is reported that several raises have been made east of the 337-level, and that some good ore has been found.——The OPHIR, on the 27th inst., had extended its drift a distance of 473 feet. On the 22d inst. an assessment of $3 per share was levied.——OVERMAN sold at an advance. On the 24th of the current month $7,580 in bullion was sent forward to this city.——IMPERIAL is not active. A telegram of the 28th states "that one of the reefs at the new shaft broke, and work is stopped until a new one can be put in its place." Nothing new otherwise.

SIERRA NEVADA—is not in large demand. From letters to the 24th inst. we learn that this mine does not look quite as well as previously reported, except the south breast, which is said to look better than ever. The large body of ore on the south side of the shaft has not equaled expectations, and is now quite poor; the works have, however, developed the bonndaries of the deposit, and proved the existence of a large body of ore.——JUSTICE AND INDEPENDENT levied an assessment of $5 per share.

From the *News* we cull the following in reference to some of the White Pine claims:

ORIGINAL HIDDEN TREASURE—Ten tons of good ore are taken out daily and sent to mill. A larger body of fine ore is in sight in the north breast than ever before, and a broad body of the same quality is being opened in the south breast.——INDUSTRY is yielding and sending to mill about nine tons of ore daily. The original shaf was sunk to a depth of 33 feet, finding five feet of ore at the bottom. This was breasted north 30 feet, and a winze commenced. After sinking 20 feet on this, the foreman caused a shot to be put in the roof immediately nbove it. This threw out a quantity of very rieb ore, when the winze was covered over and stoping commenced. The stopehas been carried np 16 feet and sonth to within 15 feet of the shaft, where the ore was hut five feet thick, and has revealed an immense body of high grade ore, through which masses of horn silver are freely distrihuted. A dividend of $4 per foot has been announced.——MAMMOTH quoted at $1 75. The Shehoygan shaft or incline is down 25 feet, in a very large body of fair ore. The shaft in the east surface cut is 20 feet down, toncling on the foot wall, showing a hody of ore 14 feet thick, average assays of which go $260 the ton.——CONSOLIDATEN CHLORIDE FLAT has been raising and shipping ahout the same amount of ore this week as last—37 tons per day.——VIRGINIA shows a large body of rich ore in the north drift, 30-level, 20 feet from the shaft. The hody of ore heretofore mentioned as extending from the surface down the 20-feet sonth breast still holds its size, and is much improved in quality. Ten tons of ore per day will be the regular shipment nfter this week.——In POGONIP AND OTHELLO, work is progressing in the north and Othello shafts, and the ore piles ahont the mine begin to assume mammoth proportions.

California Savings Institutions.

The following table is very instructive. The first thing that nttracts attention is the rapid increase in number of depositors, and the yet greater increased volume of their deposits, within the past six months. This is the more remarkahle, in view of the depressed and stringent coudition of the money market during April, May, and June. From January 1st, 1869, to July 1st, the deposits augmented $2,400,569, and the depositors 2,081, which gives an average of $1,153 to each of the new depositors. Bnt dividing the total of deposits amoug the total number of depositors will give to each ahout $775, which is an increase of $26 to each person since Jannary 1st, 1869. In the course of a single year, the number of depositors in the various Savings and Loan Societies of San Francisco augmented 5,909, and the volume of their deposits was increased $5,004,713—equal to $850 for each person. Let us contrast these figures with those of the more flourishing Eastern States. The average annual increase in the Massachusetts savings banks from 1850 to 1860 was 12⅔ per cent., gold; while, from 1861 to 1867, it has only been 8⅝ per cent., currency, or 4⅓ per cent. gold. In 1861, the average to each depositor in the New York savings banks was $224, gold, and in 1868 it was $281, currency, which is equal to $208 gold, showing a decrease of $16, gold, to each depositor. In Philadelphia, a like decline is noticed. The average per depositor in 1861 was $192, gold, and in 1868 it was $209, currency, equal to $155 gold, showing a decrease of $54 to each depositor.

The Sacramento Savings Bank dishnrsed a dividend of 1 per cent. per month for the period embraced in tbe above report Oakland Bank of Savings, 1 per cent. per month on first-class, and 10 per cent. per annum on second-class deposits; and the Stockton Savings and Loan Society, 1 per cent. per month to shareholders; 10 per cent. per annum to first-class depositors—6 months; 8 per cent. to second-class—3 months; and 4 per cent. to transient depositors. In the reserve funds of the Stockton and Oakland institutions are included the sums of tbeir partly paid up capital stock.

Our interior savings hanks have not heen idle, but have kept pace with the general prosperity exhibited by metropolitan establishments. From July 1st, 1868, to the same dato in 1869, the nnmher of depositors has increased 1,888, and the deposits, $720,050, being $381 for each depositor. Several other savings hanks have been recently organized in the interior; hnt sufficient time has not yet elapsed to embrace them in our report.

NAME.	Date of Organization.	Open Deposit Accounts, July 1st, 1869.	Deposits.	Loans.	Gross Earnings.	Reserve Fund.	Expenses and Federal Tax.	Cash on hand.
Hibernia Savings and Loan Society	April 7, 1859	14,544	$10,483,212 06	$10,697,575 52	$553,376 25	$208,109 94	$57,762 45	$142,596 53
Savings and Loan Society	July 23, 1857	4,844	5,053,542 35	4,910,530 97	225,568 17	127,719 69	22,132 94	231,941 96
French Savings and Loan Society	Feb. 1, 1860	4,000	3,650,846 61	3,653,509 91	219,109 05	69,090 64	19,373 72	150,006 58
San Francisco Savings Union	June 16, 1862	3,983	2,838,490 64	2,817,383 54	165,734 59	116,751 44	15,426 17	59,484 70
Cal. Building, Loan and Savings Society	May, 1861	1,571	716,090 00	669,816 20	56,018 68	30,362 21	13,067 31	72,301 53
Odd Fellows' Savings Bank	Oct. 13, 1866	1,354	888,097 53	841,469 03	54,197 09	5,339 49	5,236 66	28,586 66
Farmers' and Mechanics' Savings Bank	July 1, 1867	411	235,227 06	212,038 46	14,382 45	4,253 58	46 616 68	40,931 60
German Savings and Loan Society	Feb. 10, 1868	1,487	705,755 01	728,672 19	25,574 19	42,005 50	6,303 04	64,531 69
Totals—July, 1869		31,974	$24,734,077 07	$24,747,700 32	$1,403,654 41	$622,816 40	$169,538 70	$1,128,717 14
Totals—July, 1869		29,393	22,372,508 37	22,021,510 21	1,134,080 05	725,886 49	102,685 75	1,295,615 80
Totals—January, 1869		25,055	19,676,384 07	19,330,060 07	953,655 77	551,967 53	91,914 53	1,021,050 75
Totals—January, 1868			16,838,495 99	16,838,440 64	843,917 40	485,700 07	68,530 77	924,381 06
Totals—July, 1867			13,833,259 11	13,218,620 22	694,310 69	470,079 46	64,531 69	1,100,506 17
Totals—January, 1867			10,358,688 40	10,193,914 18	564,469 65	328,916 92	47,718 69	809,760 11

The dividends for the term of six months under review are as follows: Hibernia, 10 per cent. per annum; Savings and Loan, 12 per cent.; French, 11 per cent.; Savings Union, 11 2-5 per cent. on term, and 9⅗ per cent. on ordinary; California Building, 10 per cent. on ordinary, and 12 per cent. on term; Odd Fellows', 13 per cent.; Farmers' and Mechanics', 10 per cent. on term; German, 9⅕ per cent. on ordinary, and 11 2-5 per cent. on term deposits. The Odd Fellows' Savings Bank, the Savings and Loan Society, the French Savings Bank, and several others, pay proportionately higher dividends than the other institutions, for the reason that they disburse to depositors alone their dividends ont of the net earnings, while those managed by stockholders allow additional dividends, which we have reason to helieve are quite large, though not made public.

COSTA RICA MAHOGANY can be had on very reasonablo terms of Hobbs & Gilmore, Market street, near Beale. ***

IT may be singular, perhaps not, that no one purchasing spectacles from C. Muller, 205 Montgomery street, is ever dissatisfied with his bargain.

CONTINENTAL Life Insurance Company, 302 Montgomery street, corner of Pine. *

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alpha Cons., Storey co., Nev., June 5, $5	July 10	July 31
Blue Rose, White Pine, May 31, 5c	July 10	August 1
Bullion, Storey co., Nev., May 25, $10	Payable immediately	
Brodt, White Pine, June 23, 25c	July 29	Sept. 4
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Central, Storey co., Nev., June 23, $2.50	July 24	Aug 14
Cesala, Mexico, June 29, $1.25	July 24	Aug. 12
Germania, White Pine, July 13, 25c	Aug. 13	Aug. 26
Cherokee Flat, Butte co., June 28, $5	Aug. 3	Aug. 18
Chester, White Pine, June 29, 15c	Aug. 4	Aug. 25
Chipiopena, Sonora, Mex., July 26, $2.50	Aug. 26	Sept. 11
Cobb Cons., White Pine, June 24, 6c	July 24	Aug. 10
Cayuga Chief, White Pine, June 24, 10c	July 30	Aug. 19
Cordillera, Mexico, July 23, $1	Aug. 24	Sept. 8
Bucklin, White Pine, July 14, 5c	Aug. 24	Sept. 10
Eureka Flat, White Pine, July 12, 50c	Aug. 13	Sept 2
Daniel Webster, White Pine, June 30, 15c	July 30	Aug. 19
Evening Star, White Pine, June 25, 10c	July 31	Aug. 21
French, White Pine, July 19, 5c	Aug. 24	Sept. 13
Gold Hill Q., Storey co., June 28, $1	Aug. 2	Aug. 23
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 30
Hidden Treasure Cons., June 29, 50c	Aug. 4	Aug. 25
Hidden Treasure, White Pine, June 29, 50c	Aug. 4	Aug. 25
Hope Gravel, Nevada co., June 29, $1	Aug. 7	Aug. 23
Hurst, White Pine, July 24, 10c	Sept. 8	Sept. 30
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 24
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Lyon M. & M., El Dorado co., July 21, $2.	Aug. 30	Sept. 20
Lubluck, Storey co., Nev., June 14, $10	July 15	Aug 3
Mazeppa, White Pine, June 30, 10c	Aug. 5	Sept. 11
Magenta, White Pine, June 24, 10c	July 29	Sept 4
Mahogany, White Pine, June 17, 10c	July 23	Aug. 13
Mammoth Cave, White Pine, July 12, 10c	Aug. 19	Sept. 23
Morning Star, Alpine co., July 21, $1.50	Aug. 31	Sept. 16
Marlborough, White Pine, July 19, 5c	Aug. 24	Sept. 13
Noonday, White Pine, June 14, 30c	July 19	Aug. 9
Ophir, Storey co. Nev., July 23, $3	Aug 25	Sept. 16
Oriental, Sierra co., July 21, $5	Aug. 21	Sept. 5
Phenix, White Pine, July 12, 25c	Aug. 12	Sept. 30
Rathbun, White Pine, June 22, $1	July 27	Aug. 14
Silver Moon, White Pine, May 31, 5c	July 10	August 1
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug 28
Silver Eagle, White Pine, July 14, 25c	Aug. 16	Sept 6
Silver Sprout, Inyo co., July 27, 50c	Aug. 31	Sept. 20
Tecumseh, Calaveras co., July 22, $7 50	Aug. 24	Sept. 15
Treasure Trove, White Pine, July 27, 20c	Aug. 30	Sept. 18
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Aug. 30
Virginia, White Pine, June 17, $1 25	July 25	Aug. 11
Virginia, No. 2 White Pine, July 21, 25c	Aug. 26	Sept. 11
White Pine Water, June 23, $50	July 28	Aug. 15
Willimantic, White Pine, May 20, 20c	July 19	Aug. 10
West California, White Pine, July 21, 25c	Aug. 31	Sept. 25
Yosemite, Humboldt co., Nev., July 2, 50c	Aug. 7	Aug. 24
Yellow Jacket, Storey co.	July 19, $10	Aug. 18	Sept. 17

MEETINGS TO BE HELO.

Columbus, Placer co.....Annual Meeting Aug. 2
Maxwell, White Pine.....Annual Meeting Aug. 4
Rathbun, White Pine.....Aannual Meeting Aug. 2
San Fernando Tunnel, White Pine.....Annual Meeting Aug. 2d
Sedgely, White Pine.....Annual Meeting Aug. 2d
White Cloud, White Pine.....Annual Meeting Aug. 2d

LAST DIVIDEND.

Amador Co., div. $8 per share.....Payable July 3, 1869
Alpha Cons., Storey co., Nev., div. $2.....Pay. June 19, 1868
Bacon, Storey co., Nev., div.....Payable June 19, 1868
Coney, preferred Stock, div. 4½ per cent.....May 10, 1869
Crown Point, dividend, $7.50.....Payable Sept. 12 1868
Chollar Potosi, div., $20.....Payable July 7, 1869
Eureka, div. $5.....Payable July 10, 1869
Empire M. & M., Nev., dividend $6.....Payable May 15, 1867
Gould & Curry, div. $7.50.....Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50.....Payable July 13, 1868
Golden Chariot, Idaho, div. $3.....Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c ₱ sh., Pay. June 25, 1869
Hale & Norcross, div. $6.....Payable July 15, 1869
Imperial, Storey co., Nev., div.....Payable June 20, 1868
Industry, White Pine, div., $1.....Payable July 1, 1869
Keystone, Sierra co., div., $32.....Payable May 5, 1869
Kentuck, div. $20 per share.....Payable Jnn. 10, 1869
North Star, dividend, $5.....Payable Aug. 15, 1868
Occidental, div. $2.....Payable March 2, 1869
Pacific Unassessable, div.....Payable June 18, 1868
Sand Spring salt, dividend $1.....Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50...Payable Dec. 19, 1868
Savage, Virginia, Nev, dividend, $4...Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1...Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. $2.50...Pay. July 10, 1869
Virginia & G. H. Water Co...Dividend, payable April 15, 1869
Yellow Jacket, div., $5.....Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this ornal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, July 30, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	—	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	88	99
Legal Tender Notes	73¾	74
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & int.	
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par & int.	
San Francisco City and Co. Sch'l Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds, 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	25	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 10s	75	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	55	—
Spring Valley Water Co	61	63¼
State Telegraph Co	25	—
GAS COMPANIES.		
San Francisco Gas Co	85	86
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
San Francisco and San Jose Railroad	—	70
Omnibus Railroad	50	—
Central Railroad	—	—
North Beach and Mission Railroad	71	74
Front Street, Mission and Ocean Railroad	11	12
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	150	160
INSURANCE COMPANIES.		
People's Insurance Company	90	95
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	110	—
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	91
MINING STOCKS—WASHOE DISTRICT.		
Alpha	21½	22
Baltimore American	—	—
Belcher	22	23
Bullion, G. H	16	17
Crown Point	35¼	39½
Cole (Va.)	—	—
Confidence	35	45
Consolidated Virginia	—	9
Chollar-Potosi	22¾	23¾
Daney	2	2½
Exchequer	8½	11
Empire Mill and Mining Co	50	60
Gould & Curry	106	109
Gold Hill Quartz	58	60
Hale & Norcross	106	107
Imperial	62	63
Julia	1½	2
Justice and Independent	63½	64½
Kentuck	205	208¾
Lady Bryan	36	38
American	25	25½
Occidental	17	—
Ophir	21	21¾
Overman	76	77
Segregated Belcher	101	103½
Savage	79	81
Sierra Nevada	9¾	10
Union	—	—
United States	—	—
Yellow Jacket	47½	48¾
MISCELLANEOUS MINING STOCKS.		
Amador (California)	275	280
Aurora, White Pine	5	15
Eureka, (California)	214	—
Golden Chariot (Idaho)	35	44
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Mohawk (California)	—	—
Pocotillo, White Pine	2	6

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, July 30, 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 75
Do. Superfine	4 50	@	4 75
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 40	@	1 75
Oats, ₱ 100 lbs	1 50	@	1 75
Barley, ₱ 100 lbs	1 15	@	1 35
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	95
Hay, ₱ ton	10 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14¼	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	20
Do. Rio	—	@	19
Tea, Japan, ₱ lb	76	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9¾	@	10
China Rice, ₱ lb	5¾	@	6¾
Coal Oil, ₱ gallon	45	@	46
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	35	@	45
Isthmus Butter, ₱ lb	30	@	35
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	50	@	55
Lard, ₱ lb	16	@	17
Ham and Bacon, ₱ lb	15	@	16
Shoulders, ₱ lb	8	@	9

Retail Prices.

Sutter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	30	@	40
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	60	@	65
Lard, ₱ lb	18	@	20
Ham and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1¾	@	2
Potatoes, Sweet, ₱ lb	3	@	—
Tomatoes, ₱ lb	6	@	—
Onions, ₱ lb	5	@	8
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	7
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	18
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O	7	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, July 30, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2¼c ₱ lb.

Scotch and English Pig Iron ₱ ton	$35 00	@	$38 00
White Pig ₱ ton	34 00	@	35 00
Refined Bar, bad assortment ₱ lb	03	@	—
Refined Bar, good assortment, ₱ lb	04	@	—
Boiler, No. 1 to 4	04¾	@	—
Plate, No. 5 to 9	—	@	04¾
Sheet, No. 10 to 13	04¾	@	5
Sheet, No. 14 to 20	05	@	5¼
Sheet, No. 24 to 27	05¼	@	5½

COPPER.—Duty: Sheathing, 3¾c ₱ lb; Pig and Bar, 2¼c ₱ lb

Sheathing, ₱ lb	—	@	25
Sheathing, Yellow	20	@	21
Sheathing, Old Yellow	10	@	11
Composition Nails	20	@	22
Composition Bolts	21	@	22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	—
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	—	@	35
STEEL.—English Cast Steel, ₱ lb	—	@	15
QUICKSILVER.—₱ lb	55	@	60
LEAD.—Pig, ₱ lb	7½	@	8
Sheet	10	@	—
Pipe	11	@	—
Bar	9	@	9
ZINC—Sheet, ₱ lb	10½	@	11
BORAX.—California, ₱ lb	38	@	40

CHICAGO TRIBUNE.—This journal announces itself "at home" to all its friends and patrons in its new and splendid building, and sends us an engraving of the same, with a descriptive pamphlet.

SHIPPING ORE BY RAIL.—A correspondent says there are large quantities of ore at Gold Run which averages from $40 to $100 to the ton, which should be worked by smelting, and thinks that such ore might be sent to this city at a profit. The railroad charges $10 per ton for shipping ore from Golconda Station to Sacramento.

THE PACIFIC WOOD PRESERVING CO. have commenced the reconstruction of their works, which were recently destroyed by fire, on King street. They will be in operation in a few days, and the new works will be better guarded against accident by fire than the old ones were.

Get Your Engravings

Made at the office of the MINING AND SCIENTIFIC PRESS in season for printing your circulars for the Mechanics' Institute Fair. Remember, a good engraving cannot usually be made in a day.

Parties who wish first-class wood cuts and electrotypes for illustration in newspapers, pamphlets and trade circulars, should call at once and examine specimens.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Mountain.—*Miner*, July 17th: We visited this tunnel yesterday. We find that they have struck a ledge of ore and are in about four feet. The quartz resembles that fouud in the Florence several years ago.

Morning Star.—Over 100 tons of fine ore has been taken out within a few days, and large bodies in sight. It is intimated that the company will ship this ore to San Francisco for a market. An increase of force is to be put ou.

Boulder Hill is again attracting attention. The near completion of the mill of the M. Co., and the probability that it will bo able successfully to work these ores, encourages parties to hope.

Items.—*Chronicle*, 17th: The Imperial Tunnel is in over 1,000 feet.....The Bullion do. abont 950 ft.....Mountain Co. has levied au assessment of two dollars per share; the stock will be delinquent August 30th.....Work has again been commenced nn the Leviatban, and this week a quantity of excellent ore, mostly copper, has been taken out. It is thought that it will pay to ship it to Swansea.

AMADOR COUNTY.

Anaconda Mine.—*Ledger*, July 24th: Mr. Palmer, the Supt. informs us that it increases in richness every foot they go down, and the last week they took out some rock tbat was literally studded with free gold.

CALAVERAS COUNTY.

Palomo.—*Chronicle*, 24th: The Palnmo is yielding large returns. At the depth of 200 ft. the lead is wide, well defined and tbe rock of a superior quality.

Harkins' Claim—Enormous Yield.—At the washing on Saturday, 440 ounces of gold was taken out—the result of eight men's labor for five weeks—an average of $34 per day to the haud. Those croakers, who sit around bar-rooms with chairs tipped back, bewailing the "played out" condition of the mines, will now bave another chance to grnmble at "their luck."

Rich Rock.—Twenty-four tons of rock from the Eherbardt mine at Independeuce, in this county, crushed at Harris' mill, yielded 89 onnces of gold—an average of $63 per tou.

Copperopolis.—Stockton *Independent* of July 26th: From a letter we have received from Copperopolis, we learn that there is great excitement in that town over some new discoveries of gold-hearing quartz and ledges of slate. Many parties are locating claims. Mr. Tulloch, of Knights Ferry, has discovered a quartz lead that yields $20 per ton. One of the slate claims is working about 30 men, getting out slate for shipment, and bas a fine prospect for a permanent and profitable business. The Union Copper Company are workiug 20 Chinamen sorting ore, and are about to again start the smelting works. The future prospects of Copperopolis are promising

MARIPOSA COUNTY.

Merced River.—Correspondeuce of *Mail*, July 23d: Every tou of rock takeu from the Hite mine has been run through the mill; not a single ton has been thrown aside, and we are reliably informed that the mill has never been cleaned up without a profit. The Fergusou Co., five miles from the Hite, couveys its rock from the miue to the mill iu a low grade tunuel 1,100 ft. long. The mill runs 8 stamps with an overshot wheel, and grinds six tons of ore every 24 hours.

NEVADA COUNTY.

West Eureka Mine.—Grass Valley *Union*, July 23d: The company have commeuced work in earnest. Au incline six by eight is being suuk ou the foot-wall of the ledge, and fine looking rock taken out.

The Situation.—Matters are quiet. Prospecting has revived somewhat, and the custom mills will be overrun with ore during the coming month.

North Star.—*Bulletin*, 24th: At the special meeting of tho North Star, held yesterday, 2,300 of the 3,000 shares were represented. F. A. Hassey made a proposition to purchase the mine at $300,000, payable in one year, the product of the mine in the meautime to be placed in charge of a enstodian mutually agreeable to purchaser and stockholders. The propositiou was rejected. At the conclusion of the meeting it was understood that work would bo again commenced at the mine.

Pittsburg.—*Transcript*, 21st: It is quite lively at the Pittsburg mine, there being about forty men at work, and in a short time many more will be employed.

Town Talk.—This gravel claim on Howard Hill, is heiug worked with considerable energy. An 8-stamp mill is used in crushing the ground, which pays an average of $5 per day to the hand.

Spring Slide.—Same of 22d: The owners have prospected this claim by a shaft, aud are now running a bedrock tunnel to open it. They have struck a channel of gravel eight feet in depth, every foot of which prospects well. A gentleman informed us that he obtained as many as 30 or 40 colors from a pan of dirt.

A Great Enterprise. — The North Bloomfield Gravel Mining Co. are making rapid progress on their line of ditch from Little to Big Cañon Creek. They have had about 150 men employed, and 150 more will be put on.

Struck it Rich.—Same of 24th: The Eagle Co., at Grizzly Hill, struck very rich quartz ou Wednesday. The owners reside in Hartford, Conn., and aftor spending an immense amount of money upon their claim, had nearly concluded it would not pay to continne the work much longer, when to the delight of the superintendent, a piece of rock weighing five pouuds was thrown out, which was broken up and yielded a little over $200. This was in the forenoon, and iu the afternoon a ledge was struck, measuring six feet in width, and in the center two feet of the richest quartz ever seeu in that section of tbe couuty.

The Empire.—*Gazette*, 28th: We learn that Capt. Leo has now a full force of workingmen. A number applied on Monday, for whom there was no room. Among those employed, are a few of the old hands, who have abandoned their opposition to giant powder, or were perhaps dragged into tho late League in opposition to their better judgment.

PLUMAS COUNTY.

Port Wine.—La Porte *Union*, 17th: A cave occurred in the Union Co's tuunel last Thursday. A contractor was rnnning an air shaft upward from a point 2,800 feet from the mouth of the tunnel, when the quicksand began to pour down in a small stream. The miner saw the approaching danger, ran down the ladder and called all hands to leave the tnnnel. In less than an hour over 400 tons of tho sand had fallen into the tnnuel, completely blocking it up and paralyzing operations for the prosent.

The Michigan claims, adjoining the Nip and Tuck, above Gibsonville, were sold to the Nip and Tuck Co. a few days since for $12,000. The claims have a frontage of 700 feet, and the ground is supposed to contain good pay. There were seven interests in the Michigan Co.

SHASTA COUNTY.

Specimen.—*Courier*, 24th: This week Mr. Hathway showed us a gold specimeu which weighed uine onnces. It coutaiued a little quartz, but was mostly gold. Found on Rock Creek.

SIERRA COUNTY.

Gibsonville.—Correspondence of the *Messenger*, 24th: Our water season is over. Considerable work has been done in the hydraulic liue, pipiug off banks that have been mostly drifted out. But this has not beeu profitable.

The Chalcedony and Bootjack claims, which have been working for some time below drainage, have struck au increase of water that has driven them from their lower works, aud which will necessitate another tunuel or steam machinery before their ground can be successfully worked. H. Taber is pushing his tunuel ahead as fast as muscle and powder will do it. Very good progress is being made, and hopes are entertained of tapping the gravel before the summer is out.....Messrs. Keefer & Emerton are doing well.....The Union claims, as usual, are payiug handsome dividends. They have water most of the year. ....The Nip aud Tuck, Schofield & Co., havo their claims in fiue working order. They have cleaned up over $30,000 this water season, and being now thoroughly opeued and prepared, they expect to do much better the coming year.....The Nevada claims, next above, are still yieldiug well. Antroo Cook is in with his bedrock tunnel 600 feet.....The Redding, Phœnix, and North Americau, at Hepsidam, are doing well. The latter company aro having to run a new tunnel. Their bedrock is on the raise, necessitating a chute and too heavy grade. The tnnnel will be about 1,000 feet loug, through gravel and pipe clay, aud the work will be comparatively light.

TRINITY COUNTY.

Trinity Center.—*Journal*, 24th:—H. Y. Fitch has found very rich diggings in the hill, opposite his residence on Hatchet creek. Three men with a small head of water tnok nut seven hnndred dollars in twenty-seven days. Smith & Carter have obtained gond prospects in the mouth of the east fork of Coffee creek, about nine miles up. The gold is coarse, and this discovery is attracting the attention of miuers in the vicinity. It is expected that the Chinaman who bought James Murray's claim, will take out three thousand dollars this season.

Stewart's Fork Ditch.—The Trinity Water, Lumber and Mining Co. filed its certificate of incorporation at Weaverville, on the 17th. This company intend to convey the waters of Stewart's fork upon the extensive mining section ranging from Weaver basin to San Matre's. It is of the higbest importanco to the county that this be done.

TUOLUMNE COUNTY.

Quartz Mill Burned Down.—Sonora *Democrat*, 28th:—The Valparaiso Mill, on Jackson Flat, near Tuttletown, was entirely destroyed by fire on Monday.

Lower California.

San Borja.—Mazatlan correspondence of S. F. *Bulletin:* The new law, making tbe exportation of ores free, has benefited cousiderably the miuing interests of this part of the country. Numerous mines have been taken up again after having stopped for many years on account of the rebellious character of the ores, and prospecting has become a new trade. This led to the discovery of the rich mine of Biriuroa, near Tapia, which promises a fabulous wealth, the vein being very wido and the assays showing enormous richness. At Cosala, the Cosala Miuing Company and Nuestra Señora are taking out rich ores, the latter furuishing 100 marks of silver weekly. At Copala, the Sombrero mine is in *bonanza*, and the Tajo miue will finally be enabled to work up its large stock of ores, haviug received new machinery by the brig *Schelekoff*.

Arizona.

Items.—Prescott *Miner*, July 10: H. A. Bigelow, of the Bashford Lyux Creek, informs us that the ditch is nearly completed.....Taylor & Davis, of Upper Hassayampa, are at work on their water wheel. Their arastras are completed.....Frank Alters informed us that several men, at work near the Chase mine, with rockers, were making from three dollars to an ounce a day.....C. T. Rogers has purchased for $500 sixty-six and two-thirds feet in the Independence mine, Goodwiu District. Work is heing prosecuted at this mine with promise of success. The owners of the Sterling bave their deeds ready to pass over to the Sterling Mining Company, as soon as the purchase money is paid them, which will be on the 12th. The sum is $30,000 in gold. The shaft is being sunk deeper; work in the sonth tunnel was progressing, and the mechauics were hammering away at the mill.....Tho news from Waluut Grove continues good. Miners are doing well.

Colorado.

Items.—*Register*, 15th: The Black Hawk mine on the Gregory is producing finely, both in quantity and quality of ore. Both of the mills are running up to their full capacity.....We were shown yesterday a specimen of silver ore from the Coaley. A seam of nearly pure silver, au inch thick, runs through it. Better ore was uever produced on the continent.....Charles Mather has got his six-stamp mill in operatiou, runuing ou waste rock from the Bobtail, and obtaiuing fair results.....Hoosier No. 5 north is producing more aud better ore than at the discovery.

Quartz Hill.—A number of meu are doing well at sluicing, on the old Patch diggiugs. A. C. Johnson is putting up a 16-stamp mill on the ditch, aud will start it up in a few days. Smith & Co. are refitting the old 15-stamp mill near the North Star mine, to run on custom ore. Geo. Mitchell has got the North Star 20-stamper running ou Illinois ore. It has been thoroughly repaired. The mine is yieldiug largely, but the ore is of lower grade than usual. Wheeler & Entwistle are at work on the old Chunk lode at Bortonsburg—have opened it in two places, aud in one shaft havo a veiu of fine-lookiug quartz three feet in width.

Ward District.—The Ni-Wot lessees are practical men. They keep 30 stamps in motion, aud have a large lot of smelting ore saved that will assay $90 per ton. On the Stoughton, Thompsou & Hartwell are raisiug a ton per day of smeltiug ore that will assay eight ozs. in gold.

Leavenworth Gulch.—Mining is more active thau at any time for four years. Parties have been working on No. 7—Dr. Harsh's claim—for several weeks, taking out rock that runs $235 per cord. Messrs. Dunn & Co. are working tbe Rockdale Co's claims on the Calhoun, under lease. Their ore yields seven to eight ounces per cord. One claim on the Idaho is being worked, producing ore that yields ten to fifteen ounces per cord. Their pay vein is from 12 to 20 inches wide.

Georgetown.—*Miner*, July 15th: The Washingtou Mining Association of New York, Geo. Stille, Superintendent here, are now putting in their mill three of the "Krom Dry Ore Concentrators," for custom work. H. S. Jacobs, Esq., of New York, one nf the Directors, arrived here, and is superintending the re-arranging of the mill. The first test was from a small lot of second class Terrible ore, that gave an average assay before concentrating, of $110.55 coin value. The concentrated ore gave a resnlt of $296.74 coin, aud the tailings $17.12. The loss is about tbree per cent. The second test was from sulpbnret and ruby ore, from Dailey district; average assay, before concentrating, $82 coin. The concentrated ore assays $800.40 coin, and the tailings $21.30. This test we do not cousider a fair one, for two reasons. First, there was not enough of the ore to work the machine properly; and second, the ore was not graded as it should have been.

Baltimore and Colorado Tunnel.—The advance made is 125 feet, the depth from the surface being 76 feet. The next teu feet of advance will increase the depth 40 feet. Oue vein bas been crossed, of which we bave previonsly made note, which is full 17 feet in width. Assays from this vein range from five to fifty-two ounces of silver to the ton of ore. A contract has been let to run a drift 50 feet east on this vein.

Empire.—We learn that the pnmp on the Conqueror mine is not working as it should. The Tindall process, in the Peck mill, is being run with poor results.

Idaho.

New Placers.—Silver City *Wave*, July 20th: Placers have recently beeu struck along the east side of Florida Mountain, commencing at Joe Brown's Gulch, below Ruby, and running along the rimrock this way, some 3,000 feet in all. Messrs. Walbridge, Blake, Jordau, Amon and others have the north end, and Joe Brown, J. B. Bailey, Heury Martin aud H. J. Bixbey have located 600 feet on the south. Au effort will be made to convey water to tbese rich deposits. The surface is said to prospect one cent, and Mr. Bixbey informs us that at the depth of a few feet as high as eight cents can be procured. An old shaft, snnk by Bixbey and others a year ago, 80 feet deep, on the same ground, has yielded as high as $5 to the pan in the bottom.

New Ledge.—The Home Resort, or "Brazen Elephant," as McConathay's extension is called, is a ledge of very fine quartz, showing gold and native silver, discovered last Wednesday by J. Chauncey above the Whisky Gulch shaft house. We visited it on Saturday, and found what appears to he a very well defined ledge. Tho rock, at a depth of four feet, is solid, and the vein two feet wide.

Potosi.—Same of 23d: This mine is now being worked by C. S. Peck. The shaft is dowu 63 feet below the second level, or 110 feet from the surface. A good face of fiue looking ore is in sight.

Silver Cord.—The Cosmos mill is puffing away on Silver Cord ore. Ten stamps, six pans and three settlers are iu lively exercise, with plenty of food ou the dump and in front of the batteries to keep them moving for many a day. The machinery works to a charm, and the rock looks well.

Ida Elmore.—*Avalanche*, 24th: This mill has rosumed wnrk. The new hoisting works will be ready for operations uext week.

Dexter.—Owen McMahon & Co. aro sinking a shaft, and the prospect is favorable. Every particle of ore extracted from it as yet contains more or less gold. Tho shaft has been sunk 15 feet.

Red Jacket.—Several hands are at work, and indications continue favorable.

Allison.—The uew hoisting works are in operation.

The New York mill is pounding away night and day on Golden Chariot rock. The ledge is as large as ever, and the ore has not lessened in valne.

Water Ditch.—Capt. Tedford and others contemplate cutting a ditch for the purpose of conveying tho water of Jordan creek from near the old sawmill site, two miles above town, along the south side of the creek to Wagontown, for miniug purposes. This is an important enterprise, for it will supply with water many rich placers which are known to exist in that region.

South Mountain.—"Howard" writes the *Avalanche* that there has been discovered in the mountains 24 miles sonth of

Silver City an immease lead lodo in lime, like the deposits of White Pine. It is 44 feet wide, aad assays in silver $137 to $266 per ton.

FLINT DISTRICT.—Two capitalists from Chicago worked two tons of Sherman rock a few days since; result, $538 silver. Six tons Jacoh Astor was lately worked; $210 per ton.

Nevada.

COPE DISTRICT.

The Elko *Independent* of July 21st says: Mr. Cutter, who returned from Cope on Saturday, says everything looks promisiag. The Argenta appears to hava tho largest masses of rich ore. Tho owners believe that they can take out a ton from the hottom of their shaft that will equal any ton that ever came out of the Eberhardt. We have a specimen that is covered with horn silver. Numerous other lodes are being prospected, and all are showing good ore.

RICH ORE.—Three tons of ore from tho Argenta, taken to Doll's mill, Washoe Couaty, by Col. Fraak Denver, worked hy dry process $620 per ton, and hy the wet process, $439 per ton.

LITTLE GIANT LEDGE.—We were shown some very fine samples of ore yesterday from the above named ledge, which assayed at the rate of $640 in silver and some gold. This ledge is one of the latest discoveries.

MORE GOOD NEWS.—Same of 24th: Mr. L. Summers arrived in town Wednesday, with soma ore from the Little Giant. A piece that had been huraed in a blacksmith's fire was completely spotted with silver drops. He also showed a sample of ora that was all metal, from the Black Warrior. This assays hut $5 per ton in silver, but we think coatains a large per cent. of copper, with some lead aud antimony. This lode is hut 25 miles from Elko, and is 12 feet wide.

COPE.—Three assays made yesterday, from what has herctofore hcen supposed to be the cap rock of the Argenta ledge, went as follows: $12,064; $6,325; $6,254. Aa assay made on ore from the Sunay Hill ledge yielded $852.22 to the ton iu silver.

BULL RUN DISTRICT.—We were shown some rich and heautifnl specimeas of ore yesterday, hy G. L. Tucker, who has just returaed from Bull Run. The ore was from the Porter ledge. The ledge crops above the ground a distance of 650 feet, is from two to four feet ia thickness, and shows rich ore the entire distance. Mr. Tucker had two assays made of the ore siace his return, one of which went $1,417, and the other $1,100.84.

REESE RIVER.

BUEL NORTH STAR.—*Reveille*, July 17th: About aight moaths ago, C. C. Laae was appointed snperiutendent of this mine. The vein had been lost for some time, and several unsuccessful sttempts made to find it. Mr. Lauo started a drift iato the hill, from the hottom of the iacline,—4,000 feet down. The vein was found after ruuning 200 feet. The incline was abaadoned, a consolidatioa effected with the Lane and Fuller companies, and the working of the mine was trausferred to the perpeudicular shaft of the latter, some distance higher up tho hill; a drift having heeu run from the bottom of the shaft, connecting it with the works of the Buel North Star. All this drifting and moving of machinery uecessarily entailed expense; but as ore was being extracted the company (a Boston compaay) has never heen called upon for one dollar since the vein was struck, hut on the contrary, have had $52,000 (currency) sent them as dividends, whereas the total amount furnished hy them up to the time of the striking of the vein was only $17,797.60 (coin). At present the mine is in a fix which it does one good to look at. We think that 3,000 tons may he said to he in sight, and that their yield will not he far from $600,000.

The article proceeds: "Though not a bettiag man, we will go any of our White Pino cotemporaries, say $100, to he appropriated towards a suit of clothes, that the Buel North Star miue, of the Lane & Fuller Co. will yield more hullion in the next twelve months than any oue mine in the White Piue district, not exceptiug Aladdin's cave, the great Eberhardt."

BULLION.—Amount of bullion produced for the past week: Manhattan mill—19,800 ounces. Mettacom mill—12,201 ounces.

MINERAL HILL.—Another exodus of our citizens has taken place to this new district. Our mill superintendonts are looking for hands in vain. We shall soon hear something definite from the new mines.

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

YELLOW JACKET.—Gold Hill *News*., July 24th.—An iacreased number of men have heen employed dnring the past week, and an average of two hundred tons of ore per day extracted. The air in the snnth mine is improving. It will he some weeks yet beforo tho water is out. Some forty feet of the shaft has also to he retimhered. The old building over the hoisting works is mostly taken down, and will he rehuilt in differeut shape. The hoard of trustees voted to donate $2,500 for the relief of tho sufferers hy the late accident. They also voted to levy an assessment of ten dollars per share an the capital stock.

CHOLLAR POTOSI.—The loss of the fine new hoistiag works and extonsive buildings coanected therewith, destroyed by fire last Wedaesday, did not interfere materially with the workiag or ore productiou of tho mine, as the new shaft developed nothiug at the lower levels, and the prospecting through this shaft, as well as the ruaniag of the works, was only a bill of expense to the company. The entire loss of company property hy this fire is estimated at $80,000. The shaft was too far west, aad for deep prospecting it would pay the company well to abaadon it and sink coasiderably further east. The yield is 250 tons per day, assaying ahout $50 ou the average. Excellent hodios of ore have heen developed within the last few days.

SIERRA NEVADA.—The mill still pounding away, reducing over forty tons of ore per day, on the average. The ore beiag worked at present is thought to he of extra quality, although less free gold is perceivahle; this poiat, however, will be satisfactorily demonstrated at the next clean-up, which takes place on the 31st.

VIRGINIA CONSOLIDATED.—New shaft will be dowa to the level of the Latrohe tuuuel to-morrow, 184 feet from the surface. All the waste rock and earth is sent out through the tunnel, and hy means of a windlass the siuking cau he continued for fifty or sixty feet deeper, by whioh time the proposed steam hoistiag works at the surface will be ia positiou.

KENTUCK.—The opening made beneath the firo, through the 900-foot, or lowest level of the Yellow Jacket, will develop a fine body of pay oro, of unkaown depth or height. The upper levels will yiold ore eaough to keep the Sunderland and Pio neer mills ruaning.

CROWN POINT.—Still drifting east at the 1,100-foot level. Tho water flowing from the level above bas decreased very materially, allowing of better progress in tbis level. The west wall of the ledge will not be reached for some weeks yet.

GOULD AND CURRY.—The old workiags of the upper levels yield hetween forty and fifty tons of ore per day, assaying about $36 on the average. The quaatity will he increased when the secoad statioa drift is all cleaned out, which will he in two or three days longer. This drift is 750 feet in length. Drifting east through the ledge at the seventh station was resumed last Sunday, aad good progress is beiug made.

OVERMAN.—Progress after the usual style. Producing considerablo medium grade ore, hut no rich hunches. The Belcher and the Segregated Belcher prospecting as usual, and not raisiug aay ore to the surface.

IMPERIAL-EMPIRE.—Repairs to shaft progressing. The upper levels yield a limited quantity of good pay ore, yet not enough to pay current expenses without the aid of an occasional assessment.

OPHIR.—The drift west at the 700-foot level is now in 460 feet from the new shaft. The face is in rather more favorahle looking rock, yet no material change is perceivable.

HALE AND NORCROSS.—Yielding ahout 125 toas per day, principally from the fourth station. Shaft undergoing repairs.

LADY BRYAN.—This famous outside mine contiuues looking well. The annual meeting of the company will be held August 3d, at Virginia.

WHITE PINE.

FOR THE WEEK ENDING JULY 24TH.—The Mining Review of the *News* opens thus: Although the mines are running light on work, compared with the numher of men omployed previous to the effort to reduce wages to $4 per day, yet they aro lookiag better than at any previous period, and considerable prospectiag is going on in unopened claims. The contract system is working admirably—for the mine owners; while from 30 to 100 miners visit the outside mines weekly in search of employment at the wages offered. Owners, superintendents aad foremen, and even the men themselves, fear violence from the Miners' Union, and for this reason no one is engaged at $4. A counter organization is now talked of, for the purpose of protecting miners in their peaceful pursuits at whatevor wages thoy may be ahle to obtain and willing to work for. Not a mine has yet yielded to the demands of the Union, and from present appearances it is not likely that a singlo ono will. Coutracts have been let in all of those which temporarily suspended work, save the Eberhardt, aud many miuers so employed are not making the $4 per day.

BULLION.—Our hullion shipmeat for the week foots up $69,739.76—heing $23,038.53 more than that of last week, and $8,440.57 more than for tho week previous.

ITEMS.—*News*, July 19th: The Richmand, next the Eberhardt, has levied an assessmeat of $3....Mszeppa will start up to-day....Rock from Silver Vault Tunnel assays $55 in silver—some gold.....20th: Old Ned is sending ore to O'Conaor's mill. An assay went $113 to the ton....Natioual Tunnel is ia 104 feet....21st: A. P. Stanford is boriug an artesian well at his mill. ....The Earl Co. is shipping oro to one of the Shermantown mills....23d: There are uow 30 houses in Ophir City....Bassett & Co. have opened an assay office in Treasure City. Can work ore in lots up to a hundred pounds....Water compaay getting on well....*Empire*, 20th: Ten and a half tons of ore from the Virginia milled $1,407, or $134 per ton. Not selected.... 21st: The Brother Conover claim has been sold to New York parties for $30,000; no sale if not paid in 30 days....Pogoaip & Othello ore as good as ever....*Telegram*, 22d: We have to-day seen an assay receipt for Jenness ore which went $716 per ton....Mr. Bennett shows us a small bar from 25 lbs. Caroliue ore; value over $400 to the ton.

MILLS AND SMELTING WORKS.—*Empire*, 22d: The new mill of Logan, Lucas & Co. at Swausea commeuced operations yesterday. It is a rotary crusher, of the Howland pattern, and is said to have a capacity of 24 tons per day. The cost of the mill complete was about $20,000. It started on low-grade ore from the Low miae, Bromide Flat, and everythiag moved like a charm. ....*News*, 23d: The Metropolitan mill is now in complete runniag order. Its capacity is 15 stamps, 10 paus, 5 large settlers and a rock-breaker, with power and water sufficient to run everything night and day, crushing with ease 20 tons every 24 hours....The Uaion Co. are putting up tho Dayton mill aloagside the Manhattau—to be run by the same water....*Telegram*, 21st: Six wagons, with the greater part of the machinery of a 10-stamp mill arrived at Swansea yesterday....San Francisco parties are preparing to erect extensive smelting works uear Swaasca. If satisfactory arrangements can he made with mine owners, the work will be commenced at once, aad in one month several large furnaces will be in active operation.

OUTSIDE DISTRICTS.—*Telegram*, 22d: Work on the Lizzie Potosi and Miner's Dream in Cave District is progressing finely....An Indian came into Spriagville, in Patterson District, and said white men had struck very rich placer gold diggings on the Little Colorado....Martin & Davidson's mill at Patterson is progressing.... Specimens of gold-bearing rock from Pinto District which we have heen shown, are extremely rich....Rich chloride ore struck in Shoshone Distaict. A mill will be running by Sept. 1st....*Empire*, 23d: A new district discovered due south from Carlin and 60 miles from Hamilton. Assays of ore run up to the thousands. Many have left for the new discovery....*News*, 20th: Eno writes from Mineral City, Robinson District: "Old England is au immense lode of argentiferous galena, projecting 10 or 15 feet above the surface, and is of great width. Assays show from $100 to over $400 in silver to the ton. City of London, 60 rods distant, is equally large. Flying Cloud contains refractory ore, the ouly assay made giving $190 per ton. Isaac, is a lode oaly three feet wide; several assays made give from $150 to $360 per tou. The Elijah assays from $65 to $1,200 per ton."

Oregon.

QUARTZVILLE.—Dalles *Mountaineer*, 16th: G. A. Edes, returned yesterday from a trip to Santiam. There are a few men prospectiag iu the creek, and one company is doing work on the ledge, but lahor for the most part is suspended. The compauy which owned the quartz machinery are tearing it down and those portions that can he sold for enough to pay the expenses of bringing it out of tho mountains will be brought down.

EASTERN OREGON.—A Portland telegram of July 26th. says: A force of 700 Chinamen will he put at work immediately on Burnt River Mining Ditch. Seven miles of ditch drain are to be completed, and the ditch will open a large and valuahle miuing district.

Wyoming.

MINER'S DELIGHT.—Sweetwater *Mines*, July 14th: W. D. Matheny has purchased 718 feet of the Miaer's Delight ledge for $50,000. Mr. Matheuy will soon leava for tho East, for the purpose of organizing a company to work this claim.

The ore that is now being extracted from the 75-foot shaft on the Miaer's Delight is so rich that the owners have forhidden persous going to the dump and carrying it away. We were told that one or two gentlemen made several hundred dollars hy panning out some dirt they got hold of.

ITEMS.—Tozer & Eddy's mill is crushiag rock from the Sowles and Perkins ledge. ....Forty tons of rock from the Lady Washington ledge was unloaded at Mills & Engler's mill yesterday. This mill will commence crushiag quartz as soon as quicksilver arrives....Kidder & Mason's mill is ruaniag aight and day. The machinery works splendidly....The work oa the Poor Man's ledge is goiag ahead. At a depth of 20 feet there is a 3-foot vein, and free gold can he seen in ahnndaace....Chris. Smith and Geo. Donald have struck it on the Barnahy ledge "hig." They are uow extracting ore from a 5-foot vein, and it is rich—free gold and plenty of it....Mr. Dixson iaformed us that a day and night shift was working on the Nellie Morgan ledge, aad that excellent quartz was heing taken out. At the present depth—30 feet—there is a vein of two feet.

Utah.

OHIO DISTRICT.—The Elko *Independent* of 21st says: This new district is two hundred miles snuth of Salt Lake on a western spur of the Wasatch mountains. The ledges are well defined, and rich in hoth gold aad silver; besides considerable miaiag is doae for placer gold with fair success. A new county has beeu formed, named Piute, and quite a town has grown up at the principal miaing camp, called Virginia City. The ledges average from four to forty feet in thickness. Contracts have been made for the erection of two aew mills, one of twenty and the other of forty stamps. Theso mills will be shipped by way of Ogden and Salt Lake.

The Engineer of the Present Day.

The followiag is from an article on "The roads of New York Central Park," by Wm. H. Graat, Superintending Engineer: "We are aware that there are persons, tolorably well informed, who, from a habit of looking only in one direction, and that far, very far backward, have wrought in themselves a strong conviction, that to undertake a piece of work requiriag the employment of an engiaeer, is to embark in a career of extravagance and to inour uaknown outlay. An engiaeer's estimate is to them almost synoaymous with an ascending series of expenditures eading only with exhaustioa, and his plaas are regarded as ingenious refinements upon the old fashioned ways of doing things that are incoaceivable or useless. The impression canaot be eradicated with such persons that an eagineer canaot study or practice econony, whatever else he may do; his work, if perchance it turn out well in other respects, caunot, in any event, be a success as to cost—in other words, cannot be cheap. We say that this is simply a mistake. The profession has got beyond it. It is no longer the practice of the engineer; it is the malpractice of the pretender. The speed of the ocean steamer, the locomotive and the electric telegraph have advanced things somewhat. We are no longer in the past. A glance at the progress that has been made, within a very few years past, reveals greater achievements and successes and more substantial improvements, than any previous page of history can show. If there is any basis that is fundamental and has become well established in the business of the civil engineer, it is that his is the art of attaining with certainty the greatest ends with the least and most economical expenditure of meaas."

INCREASE OF VALUES.—The increase in the property valuation of New York from 1868 to 1869 was, in round uumhers, $50,000,000—representing a total of $908,000,000. The actual sale value of this property is estimated at $2,000,000,000. The increase in the income tax returns was $15,800,000, with 1,044 more income tax-payers. An increase closely corresponding to the above is reported in nearly all our large cities.

A MAMMOTH FAN.—Farwell Hall, of Chicago, is ventilated hy a gigaatic fan, weighing two and a half tous and making five hundred revolutions per minute.

MINING AND SCIENTIFIC PRESS.

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San Francisco:
Saturday Morning, July 31, 1869.

Notices to Correspondents.

Skeptic, Marysville.—Missing formations in the geological series occur in many parts of the world and with numerous varieties of rocks of all ages. The study of the cause of these missing strata has not been systematically followed, but no doubt will be. Dr. Bigsby has recently made an able commencement of this branch of geological inquiry by a lengthy and interesting paper read recently before his brother members of the Geological Society, London. We have only room to quote the following: "Missing formations are amongst the several consequences of emergence and immersion, themselves the effects of one of the great cosmical agencies—oscillation of level—which may be gradual or paroxysmal, through all the degrees of velocity and energy."

Phœbus, Marysville.—Substances existing only in minute quantity, such as iridium, rubidium, etc., are detected by the spectrum analysis,—first, by evaporating the liquid containing such substance until the salt is obtained in a dry state. A portion of the latter is next introduced by a platinum wire into a colorless gas flame, the light from which is made to pass through a prism, and viewed through a small telescope, or spectroscope, as it is called. By the aid of this, one or more bright lines or bands are seen in the spectrum, which, according to their position, number and color, indicate the presence of different elementary bodies.

Explorer, Austin.—The discovery of cæsium,—so called from the bluish gray line, which it presents in the spectrum,—and rubidium, named from its forming two red lines in the same instrument,—were first discovered by Professor Bunsen, of Heidelherg, in the hot waters of Baden Baden and Durkheim. For this purpose it was necessary to evaporate fifty tons of water in order to obtain 2,000 grains of the two new metals. Taken together, their proportion to the water was only as one is to three millions.

Elastic.—A very excellent substitute for gutta percha, it is said, may be obtained in limitless quantities in the forests of British Guinea. One of the singularities associated with which, is stated to be that the tree producing the gum invariably yields the largest quantity at the full moon, at which period the yield is said to be from six to ten times more than at other periods. A similar gum is said to be obtainable along the Western Ghauts on the Malahar coast, India.

S. M., Calistoga.—During the great earthquke of Lisbon, a spring at Bagnéres de Luchon, in the Pyrenees, had its temperature raised 75°, or up to 122°, at which it now remains. It is also recorded that hot springs at Bagnéres de Bigorre, in the same mountains, suddenly became cold during an earthquake in the year 1666.

Liberal.—The Board of Trustees of the Yellow Jacket mine, have voted $2,500 for the living sufferers from the great calamity which befel that mine in April last.

The Pacific Railroad Terminal Shops at Sacramento.

Simultaneously with the completion of the great continental railroad there went up at Sacramento, a number of very substantial brick terminal buildings, for mechanical purposes, suited to the uses and commensurate with the vastness of the undertaking. The energy and thoroughness with which these buildings have been brought to completion were not inferior to the same qualities as displayed in the road-building. Passengers up and down from the interior since spring, have observed with pleasure the laying of extensive heavy granite foundations, and the rising of one of those immense round-houses which are seen at some of the great Eastern railroad termini, followed by other large buildings for unknown purposes to the passer-by. "Progress," since the completion of the road, is now in no other way so strikingly illustrated as by a visit to the shops. They are, in the main, completed, and in full blast.

The largest iron-working, and wood-working establishments in operation west of St Louis, or even Chicago, are located at Sacramento. Activity of organized labor, in the bustling of artificers that belong to such regions, is as well displayed, and as much at home, apparently, at Sacramento, as it is at Patterson, or at Nashua; but the work in hand that must fall to the western terminus, is evidently yet in its infancy, and is destined to grow to proportious beyond even the capacity of the present buildings.

It is only a few weeks since that the machine shop and the car shop have been fully supplied with the necessary machinery and been in operation; the round-house having, however, been in use for a number of months. Accompanied by the Resident Engineer, Mr. Joseph R. Wilkinson, we have made a visit which has resulted in the following notes:

There are now 160 locomotives at this end of the road—belonging to the Central Pacific Company—of which 29 can be accommodated at one time in the Sacramento round house. Its front measures 611 feet; its rear, 411 feet; depth, 64 feet, and hight 24 feet. Water for the engines is supplied from a side tower, called the oil house, in the top of which is a tank containing 65,000 gallons of water, and below the same, two stories for offices, and a cellar which holds seven great sheet iron 1,000-gallon reservoirs for oil, thus secured against fire. Amongst the host of locomotives stabled in the round house, one is pleased to encounter appropriate local names suggestive of the days of Pacific Railroad explorations, of trapping, and of the aboriginal interior which is now of the past.

The wood working and car manufactory is another collossal building 90x238 feet, of two collosal stories, with straining-beam truss roof, whereby the lower story is kept entirely free and unobstructed. There is also an L 45x90 feet. Mr. Ben. Welch, the superintendent, turns out now all the cars, including doors, windows, and upholstery, from California material, that the Central Pacific Railroad can require or use up, and at a cost quite as low as that of the same articles imported. Band saws and other of the most complete modern wood-working machines may be seen at work, too numerous for mention. On the second story are the offices of the Master Mechanic, Master Car Builder, the Superintendent of Motive Power and Machinery (Mr. E. F. Perkins), and of the Draughtsman, and various clerks.

The machine shop, of which Mr. George D. Welch, Master Mechanic of the Sacramento Division, has the direction, is 100x205 feet, beautifully roofed, and filled with superb iron working machinery adapted to railroad uses. This shop is intended to do all the iron work of the road but local repairing, for which shops have been built along the line—as at Rocklin, the "foot of the hill," where there is also a first-class granite round house, and where two or three additional engines are in readiness to join the single one that does duty for fifty or sixty cars between Sacramento and that place. In the machine shop there are eleven pits, adapted for locomotive repairs, and a traveling bridge by which locomotives can be picked up and lifted about like toys. Amongst the finer and special pieces of machinery, are a collossal lathe for turning locomotive driving wheels 6½ feet in diameter, a drill for boring out and smoothing the center of car wheels, nut-tapping machines, very large iron planing machines, a slot-cutting machine for keying pistons and the like, besides the usual multitude of ordinary iron working contrivances.

The finest engine on the coast furnishes the power,—a Corliss engine of 160 horse-power built at the I Street Iron Works in Sacramento, by the Pacific Railroad Company. Indeed, we are justified in claiming this engine as amongst the best pieces of workmanship of the kind in the United States—certainly we have seen nothing superior. Water for the entire works is furnished from two artesian wells thirteen inches in diameter and seventy-five feet deep (through sand and light alluvial material to a boulder formation at that depth, which holds highly ferruginous waters) being raised by two pumps worked silently by friction pulleys. The belt from the engine is twenty inches in width, ¾-inch in thickness, and ninety feet long. Chimney stack 92½ feet in hight.

A blacksmith shop 60x150 feet, to contain thirty forges and three steam hammers, completes the list of buildings now erected. All are of brick, but enclosed at one end with wood, with a view to extension whenever necessary. The ground on which the Pacific Railroad terminus is located has all been made, to a depth of nine to eighteen feet, having formerly been a lake.

The *personelle* of the Central Pacific Railroad Company has heretofore been published in the Mining and Scientific Press, and has not much changed, except in the location of operations. Mr. Butler Ives, the explorer and surveyor of the different routes that were conceived of or suggested between the Sierra Nevada and the Rocky mountains, and upon whose report not only the Central but the Union Pacific Company, on this side of Ham's Fork, laid the rails where we now find them, is employed on some map work for publication. Mr. A. S. Bender is now in charge of the Western Pacific Railroad construction, and Mr. Charles Cadwalader of the Marysville and Northern road construction. Mr. Gray, the consulting engineer, makes his headquarters at the company's office in San Francisco; Mr. Guppy, at Oaklaud; Mr. Haslitt is seeing to engine houses and stations on the line of the road. There are built engine houses at the Summit, holding ten engines, at Truckee sixteen engines, at Wadsworth twenty, at Carlin twenty, and at Winnemucca twenty.

A number of parties are out surveying between Marysville and Willamette Valley, Oregon.

The Coolie Question.—The Secretary of the Treasury has taken such action as will put an effectual stop to the projected coolie operations of Mr. Koopmanschap and the Memphis labor speculators. No agreements made in China for labor at ten and twelve dollars per month will be recognized by the courts of this country, and John Chinaman is too smart to continue to work for ten dollars after he arrives here and finds he can get twenty or or thirty. Chinese emigration will be protected only on its legitimate basis of free labor; as such, however, it will be protected at all hazards and at any cost; to *that* the government is bound by solemn treaty.

A National Bank Combination.

A bold movement is being made by the national banks toward consolidation, or rather toward coöperation, for their own interests as opposed to that of the people. They are said to be putting themselves on the basis of "armed peace." This movement, if rightly interpreted, is the most gigantic moneyed coöperation ever undertaken in the history of the world. The banks now number 1,629, with loans amounting to over $3,350,000,000, issued to over 1,750,000 persons. The power that may be wielded by this combination will be almost irresistible to whatever end it may be resolutely and judiciously directed. It will be able to collect millions of dollars in a week to accomplish any desired object which the managers may have in view. In these desperate days, when, according to common report, Congressional votes can be so freely and so cheaply bought, such a power behind the throne may well be dreaded. The object of the combination *may* be laudable and patriotic. One of the proposed objects is to save themselves from disaster during the convulsions which it is anticipated must attend the passage of the changing from a currency to specie basis. But will the interests of the *people* be thought of when the crisis comes? There is no telling what questions or issues may arise; and it is fearful to think what *might* be accomplished by a corruption fund, of the many millions which might be so easily raised, if placed in the hands of unscrupulous men. A skillful manipulation of Congress might place the people of the country more completely within the hands of these banks than they now are in the hands of their chosen representatives. The banks might hold the field triumphant, in spite of the people, for years, if they should so determine. We in California are happily, by our local specie banks, quite removed from any direct influence that might result from such a catastrophe; but we could not fail to be more or less indirectly affected by any catastrophe which might befall our friends and correspondents at the East. The movement is beginning to excite much comment throughout the Atlantic States.

The Powell Expedition all Right.

Letters have been received from Major Powell, of the Colorado River Expedition up to June 29th, at which time the party were all safe and lying by for a few days for rest. The party had passed four cañons, of about twenty-five miles each in length, the walls of which were from 2,000 to 2,800 feet high; were compelled to make portages of rations, etc., and let the boats down with lines. One of the boats was wrecked with the loss of a portion of the supplies and instruments. The instruments were duplicated. Some fine fossils have been collected, and a grand geological collection and a good map will be prepared. The boats seem to be a success; although filled with water many times, they never sink. The wreck was due to a misunderstanding of orders. The party was resting for eight or ten days to make repairs and dry rations. They were all in good health and spirits, and filled with high hopes of success. The Major is very anxious to make observations on the 7th of August, of the eclipse.

Mechanics' Institute.—The regular monthly meeting of the Mechanics' Institute will be held in the Institute building on Thursday evening next, August 5th. At a quarter past eight on the same evening the Polytechnic Association connected with the Institute will hold its second regular meeting, at which a paper will be read by Mr. W. B. Ewer, on "Explosives." After the reading of the paper, the subject will be open for general discussion. These meetings are open to all—free. The public generally is invited to attend.

Tule Reclamation—Sherman Island and the Roberts Enterprise.

A party of gentlemen from San Francisco, chiefly capitalists and engineers—in truth a very respectable and solid body, representatively—made a visit on Thursday and Friday of last week, July 22d and 23d, per steamer Dover, to Sherman Island, at the junction of the Sacramento and San Joaquin rivers, for the purpose of taking some notes in regard to the actual status of the reported successful reclamation of that island, from a financial and engineering standpoint; and to convince themselves of the practicability of extending similar operations on a methodical basis to other possible reclaimable lands, with so large an area of which our State is blessed—or cursed. A very legitimate enterprise of this kind, inaugurated by Geo. D. Roberts, for the purpose of reclaiming adjoining islands (Twitchell, Brannan, etc.), which has taken the name of the Tide Land Reclamation Co., was the origin and interested cause of the excursion, the object being to call the attention of those able to contribute to or in any manner interested in such reclamation, including the public at large, through the press, which was duly represented, to the importance of the results attained by the indomitable settlers of Sherman Island, organized under the Swamp Land Law of the State.

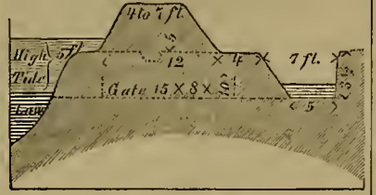
The party consisted of Messrs. Roberts, S. Heydenfeldt, Jr., L. Tevis, Wm. Doolan and W. C. Walker, of the Reclamation Co.; Messrs. Clark, Upham, Kimball, Boggs and Fuller, reclaimers and farmers of Sherman Island; and M. Derbec, L. Sainsevain, M. de Breyl, C. A. Sumner, P. Durkin, O. L. Chamberlain, Dr. C. D. Cleveland, Dr. Silver, B. S. Hartshorn, N. D. Townsend, W. S. Chapman, B. Fabian, J. L. Johns, A. B. Winegar, W. B. Carr, Amos Bowman, N. Hubert, C. D. Carter, Governor Purdy, C. H. Swain, Wm. M. Gwin, A. C. Peachy, C. McAllister, C. P. Crocker, F. Vassault, Edward Scott, Robert Watt, Adolph Sutro, Wm. Alvord, Joseph Roberts, Jr., C. H. Burton, W. F. Garvey, Chas. W. Howard, H. W. Seales, Chief P. Crowley, Wm. Hooper, Edward Curtis, R. M. Chamberlain, H. C. Robinson, Colonel Colton, Major Elliott, U. S. A., and several others.

Sherman Island, to be brief, was found perfectly reclaimed, so as to be adaptable for easy and successful cultivation; and many parts, including several immense fields at Mr. Boggs' place, were found in crops, the luxuriance of which secured the interest of, and gave satisfaction to, every one in the party.

The tule lands appear to be all alike, and all reclaimable, at more or less cost, depending upon the rise and fall—by freshet or tides—of the surrounding waters. Against tides, the muck soil of the tules is, when thrown up and well dried, sufficiently durable. Both at Sherman Island and at Twitchell Island, upon which the Reclamation Company have commenced operations, the dimensions of the levee are, in general, as given below, and now being carried out on the latter island by Capt. W. C. Walker, with a force of about 200 Chinamen.

The slope of the outside of the levee is obtained by the rule of "drawing in nearly a foot to every foot in hight;" the inner side being less steep. Six to seven feet is spoken of as the proper width at the top of the levee; but three to four feet is the practice, on Sherman Island at least. Contracts are let to the Chinamen on Twitchell Island at fifteen cents per cubic yard. Mr. Bigelow, on Sherman Island, had his land leveed (the job having been assigned to the land owners there under the Swamp Land act) at $3 per running rod; the hight, however, was only 3½ feet from the surface. From $4 to $5 per acre is the estimated average total cost—which is scarcely more than the cost of fencing. The gate-framings, with appurtenances, are reckoned at about $100 apiece, being 15x8x10 in dimensions, and double,—one gate swinging and self-acting, the other (for safety merely) sliding, and worked by hand. There are thirty on Sherman Island.

Of the highest importance in connection with the reclamations at the mouth of the Sacramento and San Joaquin, is the point that currents and floods of the freshet season do not have to be leveed against; the waters finding such spreading room in Suisun Bay—which begins at the lower end of Sherman Island—that a rise of fifteen feet at Sacramento is scarcely as much as a foot at Collinsville, Antioch, or Sherman Island. Only the tides, therefore, have to be leveed against; and if there should be a break at high water, the devastating current would not continue after filling up the island to flood mark, when the waters would again subside, after six hours, so as to admit of repairs.



TWITCHELL ISLAND LEVEE.

Though the levees should prove utterly inadequate, farmers and gardenere could afford, it is thought, to live on stilts during a portion of the year, in order to benefit by the two or three crops that can be raised with certainty during the dry season. The soil is inexhaustible—except by fire, which has been known to burn to a depth of a number of feet, including entire levees in its leveling process—an unwarranted encroachment of the element beneath the ocean level.

In regard to the value of reclaimed tule lands, we quote from Dr. Silver's report in the *Alta* of July 26th:

To what specialty is this reclaimed island adapted? We should say to market gardening; and San Francisco may rest assured of being forever safe for supplies of its vegetable markets, beyond all cities in the world, in quality, in quantity, and in prolongation of the season of supply. In every month of the year we can have our green things. The evil that made this island of little value before reclamation now turns to priceless advantage, viz: the fact that at high tide the water is above the level of the land. This now gives the land daily command of irrigation at pleasure, without exposure to undesired inundation. Rice finds here the exact conditions required for its growth, if there be not climatic obstacles yet to be revealed.

Travelers on the river steamers get no conception of the worth of these islands. They look like swamps, given over to tules, rushes, and submergence by tides and floods, beyond practical redemption. Yet nothing is simpler, nothing easier, than their reclamation. Sherman Island is the largest. It is 12 miles long, and it contains 14,000 acres of the richest land in the world. The Valley of the Nile is not excepted—rather it is challenged. This island, by means of Chinese labor, has been, in a single year, encompassed by a levee that completely protects it from further submergence. One is surprised to see how small an embankment suffices, and how quickly the swamp becomes dry land and how kindly its soil responds to cultivation. Five dollars per acre covers the cost of the enterprise, and advances the value from nearly zero to $30 in one season.

The soil of Sherman Island is dark river alluvium, mixed with thickly interlaced roots of tule and other water plants, which make the surface spongy. When the tide water is excluded these water plants cease to flourish, the surface dries, plowing is light work, and whatever is put in the ground takes on extraordinary growth, without distinction. Potatoes are large, dry, and mealy, and every kind of fruit thrives. Corn is very luxuriant. The depth of rich soil must be great, for a ten-foot stick goes down with ease, and shows the same moist, unctious, black mold all the way.

Sherman Island contains 14,000 acres. There about 200,000 acres of similar land adjacent, of which 120,000 or more is owned by the Reclamation Co. Twitchell Island (named after the engineer of that name, now Deputy Surveyor-General, to whom is due the credit of first determining the practicability of reclamation in this vicinity from an engineering point of view) contains 3,600 acres, and Brannan Island 5,000 acres. We may add that the impression was made upon our mind that the enterprise (originated by Messrs. Roberts & Kimball) is not to be taken as a narrow land speculation, but was conceived and intended to be carried forward on liberal principles, for the advantage of settlers, and in such a manner as to promise good to all interested or concerned.

New Books.

A PRACTICAL TREATISE ON THE MANUFACTURE OF PORTLAND CEMENT—By Henry Reid, C. E. With a Translation of M. A. Lipowitz's work, describing a new method adopted in Germany of manufacturing that cement—By W. F. Reid. Philadelphia: Henry Carey Baird, 1869. 8vo, pp. 110 and 78.

This book says everything that can be said about Portland cement, from the selection of the site for the manufactory, to the manner of using the perfected article. Every step in every process is given in detail. The use of the cement in building, in marine architecture, and in roadways, is fully described and illustrated. The subject is especially interesting to a Pacific Coast architect. It is generally understood here, and is the opinion of our most competent engineers, that we have nothing to fear from earthquakes of no greater violence than those already recorded, provided our buildings are workmanlike in their design and thorough in their construction. One of the essentials to this thoroughness is the use of good mortar. Books and facts upon the making of mortar have been in demand since the shake of last October. The more the subject is studied, the more evident is it that mortar-making is by no means work which may be entrusted to a hod-carrier, as is too often done. The life of the lime is first destroyed as effectually as possible; and the trash, yclept mortar, which is then made with it, becomes part and parcel of a building which falls upon the slightest quake, or even perhaps by its own weight. It is claimed for Portland cement, not only that there is an important saving in its cost as compared with lime, but that it can be supplied to the builders in such a state that it only requires to be mixed with water for use, and needs not to be manipulated by an ignorant laborer. This cement forms a part of the "Bétons Agglomerés" of Coignet, which is now an acknowledged success in France. It may yet be extensively used in the construction of our sea-wall, as well as of our earthquake-proof buildings. The book is for sale by A. Roman & Co. Price, $7.

A PRACTICAL TREATISE ON HEAT, AS APPLIED TO THE USEFUL ARTS; FOR THE USE OF ENGINEERS, ARCHITECTS, ETC.—By Thomas Box, author of "Practical Hydraulics." Philadelphia: Henry Carey Baird, 1869. 12mo, pp. 216.

This is a very complete work. It is hard to say who does *not* want it, to make up his collection of books upon his own specialty. Those who have anything to do with steam boilers, whether as makers or users; those who build chimneys or use them; architects; stove makers and all who use stoves; in short, all whose calling brings them face to face with the expansion or contraction of solids, fluids or gases,—the laws governing which they ought to know,—will in this book find the whole matter reduced to working figures. We promise to furnish our readers a valuable extract from it occasionally. But they should buy the book. For sale by A. Roman & Co. Price, $4.25.

ILLUSTRATED SAN FRANCISCO NEWS.—We have received the prospectus of a weekly and daily with the above title. The head is of elaborate design, and the style generally neat. The illustrations are to be zincographic. The first number will appear about August 1st.

Good Mining Management.

We have received from the Secretary of the Golden Rule (California) Mining Company, a copy of his report for the fiscal year ending July 13th, as submitted at the annual meeting on Tuesday last. This mine is located near Jamestown, Tuolumne County, Cal. The mill consists of fifteen stamps, and is driven by water power. The most interesting thing connected with this mine is the fact that it has paid nineteen consecutive bi-monthly dividend working all the time on low grade ores. During the past year, the total production of the mine has been 3,670 tons of ore, averaging only $6.05 per ton—a very low grade of ore on which to make dividends. The fact that such ore has been mined and worked to a profit by this company, is suggestive and important. We append the report of the Secretary for the past year:

From 1,285½ ounces bullion	$22,204 32
Sale of old iron	177 76
Sale of Sulphurets	200 00
Interest on reserve fund	1,303 74
Total receipts	$23,885 82
Cash on hand July 13, 1868	14,456 22
Total	$38,342 04

The disbursements for the year amounted to $28,415 80, as follows:

Mining and milling account	$18,347 19
Expense account	1,256 20
Dividend account	8,812 50
Total disbursements	$28,415 87
Cash on hand July 13, 1869	9,926 15
Total	$38,342 04

A QUARTZ MILL FOR JAPAN.—We have elsewhere spoken of the shipment of a quartz mill for Japan. The undoubted success of this first application of machinery to mining in Japan, will most likely bring to this city extensive orders for machinery of a similar nature for other mines in that country. The Japanese, it is well known, have extensive mines of almost every description, especially of iron, coal, copper, and the precious metals; but their superstitious notions, or ignorance of mining, has hitherto admitted of their being worked only in a most expensive and unproductive manner. In working their mines of gold and silver, it is said that they only take out as much bullion as is necessary for government purposes. Their contact with European nations, the knowledge which they will thereby obtain of the nature and value of the precious metals, in a national point of view, will undoubtedly lead to an early change in their policy—particularly when they find that by aid of machinery they can work their mines to any depth, and that there is very little or no danger of their immediate or ultimate exhaustion. They will soon learn the probable fact that before one mine can be worked out, half a dozen others will be discovered and opened, thus rendering the mines practically inexhaustible. The Japanese have a great aversion to underground work; and indeed such work has been well nigh impracticable to them, for the reason that they have no machinery for freeing their mines of water, or for hoisting. The water is all bailed out by hand, as we have already shown is done in China.

THE HOOSAC TUNNEL—SOMETHING FOR CALIFORNIANS TO THINK OF.—The Hoosac Tunnel is progressing in a most satisfactory manner. At the east end, the work has already been driven about 5,600 feet; 166 feet had been made during the three months previous to last report, and the rate of progress has now been increased to fifty feet a week. This improvement has been effected by increasing the number and efficiency of the drills. The contractors think they will be able to complete the work within three years—about one-third of the time named in the contract. All this is the result of the improvements recently introduced in tunnel engineering at the East and in Europe. Why is it that California is at a stand-still in improvements in a direction where, from her greater interests, she should take the lead?

Professional Cards.

J. S. PHILLIPS, M. E.,
CONSULTING ENGINEER,
Examiner of Mines, etc.,
423 Washington street.....San Francisco.
(Having had 33 years' experience in Europe and America,) supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discriminatiou and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

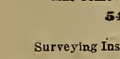
GEORGE B. ELLERY,
Practical Mining Engineer,
TREASURE CITY,
White Pine.....Nevada.
2v19tf

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
540 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted 22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf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No. 205 Third street, up stairs, San Francisco
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3v19-3m N. T. WHITCOMB.

DR. KNOWLES, Dentist,

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21v18-1y

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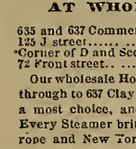
125 J street.....Sacramento,
Corner of D and Second streets.....Marysville.
72 Front street.....Portland, Oregon.
Our wholesale House, 623 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 23v16-3m

Blake's Patent.

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Patent Steam PUMP
It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted POSITIVE under all circumstances. Send for a circular. W. O. M. BERRY & CO., 114 California St., San Francisco, Cal.

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MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa, have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a reputation for their prepared Cocoas, but we doubt whether any thorough success had been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of "Maravilla" Cocoa. Adopting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage.
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate, Steam Mills, Brick Lane, London.
6v18-6m

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METALLURGIC WORKS.
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Chemistry, Assaying and Metallurgy,
That I am prepared to teach all the above branches in less time than in any European School.
I also undertake to assay and work any kind of ore, or mineral substances.
For terms, apply to **JOS. MOSHEIMER,**
Practical Chemist and Metallurgist.
Office, 328 Montgomery street; Metallurgic Works. 2005 Powell street, San Francisco. 6v18-6m

LEOPOLD KUH,
Assayer and Metallurgical Chemist,
(Formerly of the U. S. B. Mint, S. F.)
Office, No. 611 Commercial Street, opposite the Mint, San Francisco.
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PROF. HENRY WURTZ,
Formerly Chemical Examiner in the U. S. Patent Office may be employed professionally as a SCIENTIFIC EXPERT. Geological Examinations and Reports, Analyses and Assays, etc., etc. Practical advice and investigations in the Chemical Arts and Manufactures. Invention and examination of new chemical methods and products. Address, 26 Pine street, Rooms 35 and 36, New York. Always in from 12 to 3.30. ☞Written communications preferred.

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Who is the Inventor and Patentee of the new and wonderful uses of SODIUM IN WORKING GOLD AND SILVER ORES AND JEWELERS' SWEEPINGS, will furnish at the above address information in relation thereto, together with experimental packages of
SODIUM AMALGAM.
All instructions and experiments elsewhere obtained are spurious and unreliable. WORKING EXPERIMENTS ON AMALGAMATION OF ORES, Etc. Prof. W. has in operation in New York a large and small Hepburn Pan, for working 1,000 or 20-lb. charges of material for experimental purposes. 3v17-1y

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All Losses paid in U. S. Gold Coin.
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B ROTHSCHILD, Secretary. 2v17-3m

To Quartz Mining Companies.
To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—
One Steam Engine, 60-horse power, made by Burden, Brooklyn, New York.
Two large Boilers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift-Pump, 6 inches, of superior make and finish.
280 feet of 5-inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.
The Company having ceased operations intend selling off their effects as speedily as possible.
For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or E. W. HASKELL, Pacific Fruit Market, San Francisco. 24v18-1m

Business Cards.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
4v16-3m

CARD PICTURES,
ONE DOLLAR PER DOZEN,
And Photographs, Ambrotypes and Sun Pearls, by first class artists, at the lowest rates,
At SILVA'S, 64 Third Street,
Northwest corner of Mission. - - - - - San Francisco.
11v18-3m

NATHANIEL GRAY. H. M. GRAY.
N. GRAY & CO.,
UNDERTAKERS,
641 Sacramento St., cor. Webb, San Francisco.
☞Sole Agents for Barstow's Metallic Burial Cases and Caskets. 25v14tf

Farmers and Mechanics
BANK OF SAVINGS,
No. 225 Sansome Street.
Interest paid on Deposits. Money Loaned on Real Estate.
H. DUTTON, President.
GEO. M CONDEE Cashier. 19v16-3m

M. S. BUCKELEW. GEO. LAMB. H. GROOM.
BUCKELEW & CO.,
Importers and Jobbers of
Choice Teas, Groceries and Provisions.
520 Market street,
Below Montgomery street. 17v18-3m

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PURCHASER OF
COPPER ORES, BARS, MATT Etc., Etc,,
505 Montgomery street, San Francisco.
The highest market price paid for ores assaying 10 per cent. and upwards. 23v17qr

D. C. HALL & CO.,
WHOLESALE AND RETAIL
Ale, Porter, Wine and Liquor Merchants,
912 Market street, San Francisco.
☞City and country orders promptly attended to. Merchants, Shippers and Families supplied in large or small quantities. 3v19 3m

Farms and City Property.
C. H. WAKELEE & CO.,
601 California street, S. W. Corner Kearny street, buy and sell Farms and City Real Estate. Parties wishing to invest will find it to their interest to call on the . 13v18-3m

Pump Leather.
The attention of MINING COMPANIES, and others requiring a superior article for Hydraulic purposes, is invited to the heavy Oaked Tanned Pump Leather, manufactured and prepared expressly by the undersigned.
TRADE SANTA CRUZ TANNERY E. JONES & Co MARK.
Constantly on hand and for sale by
GRAY, JONES & CO.,
Depot of the Santa Cruz Tannery,
418 Battery St., San Francisco.
25v17-1y

For Miners, Millmen and Metallurgists.
KUSTEL'S NEW WORK,
CONCENTRATION
Of all kinds of Ores, and the
CHLORINATION PROCESS,
For Gold-Bearing Sulphurets, Arsenurets, and Gold and Silver Ores generally.
Price, - - - - - $7.50
A liberal discount to the Trade. For sale by the Booksellers Sent to any part of the United States, postage paid, on receipt of the price. Address,
DEWEY & CO., Publishers,
Office of the Mining and Scientific Press, 414 Clay street
16v1tf SAN FRANCISCO.

Mining Secretary.
THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.
Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.
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Room 37 New Merchants' Exchange, California street, San Francisco 17v15-tf

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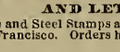
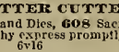
WM. BARTLING. HENRY KIMBALL.
BARTLING & KIMBALL,
BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers.
505 Clay street, (southwest cor. Sansome),
15v12-3m SAN FRANCISCO.

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
S. E. Corner of Mission and Fremont sts.,
6v14tf SAN FRANCISCO

SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
24v18 1m

J. J. JONES,
CARPENTER and BUILDER,
No. 324 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
7v13tf

W. C. CAMPBELL,
PATTERN AND MODEL MAKER,
No. **20** Fremont street, over Phœnix Iron Works, San Francisco.
Particular attention given to MODELS for the Patent Office Brands and Pattern Letters Cut. 4v18mtf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SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, **608** Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

DESKS AND OFFICE FURNITURE.
JOHNSON & BEST,
Manufacturers of all kinds of
Desks and Office Furniture,
717 Market street, near Third, up Stairs.
Warerooms, 413 Pine street, Russ Block,
A large variety of Desks always on hand; all kinds of Office Furniture and Cabinet Work made to order.
18v17qr

SAN FRANCISCO
Pioneer Screen Works,
JOHN W. QUICK, Manufacturer,
Removed to A. Pritzel's Iron Works, 218 Fremont street, near Howard, San Francisco.
Screen Punching in all its branches, at rates reduced from 25 to 40 per cent. less than the established rates. I can furnish Improved Quartz Screens several sizes finer than any Screen ever punched, giving universal satisfaction, and for strength, cheapness and durability are not excelled. Also, Punched Screens of all sizes and fineness made from all qualities of material, for Quartz, Cement, Flour and Rice Mills, etc. Screen Punching made a specialty; therefore millmen forwarding their orders to me will receive none but the best. Orders solicited.
N. B.—J. W. QUICK is the only competent and successful manufacturer of Screens in the State, having made Screens for the principal mills in this State and adjoining Territories for many years. Quartz mill owners using punched Screens which have universally failed to give satisfaction, when visiting the city will please call and see me. 5v17-1y

Pacific Chemical Works.
SULPHURIC ETHER.
SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS.
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

THE GIANT
POWDER COMPANY
Is now prepared to fill all orders for
GIANT POWDER,
Put up in Boxes, either in Bulk or in Car bridges.
General Agents,
BANDMANN, NIELSEN & CO.,
25v16-3m 210 Front street, San Francisco.

WINDMILL
For Sale Cheap!
Entirely New and of Modern and Approved Style.
For particulars apply to or address this office.

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers and others will please inform us.

Resources & Developments

IRON ORE FROM PLACER.—The Placer *Herald* of the 24th inst. says that Brown & Co., a company owning an extensive iron ore deposit, have been shipping ore to the Pacific Rolling Mills in San Francisco, where it is pronounced the best and purest ore yet tried in the State. An order was received, and some twenty tons shipped; which, smelted, yielded about 76 per cent. of pure iron. The iron furnace connected with these mills has been trying the Shingle Springs ore, but find it too poor to pay, and has commenced ordering exclusively from the Placer mine. This mine is about six miles from Auburn, is convenient to the Pacific Railroad at Clipper Gap, and is inexhaustible, there being from forty to one hundred acres of almost solid iron ore exposed on the surface, and reaching down to an unexplored depth. Should freights reach a point to make it profitable to quarry and ship this ore, the mine will supply the entire wants of the State.

THE following is from the Downieville (Sierra Co.) *Messenger* of the same date: We learn that an effort is being made to get capitalists to take hold of the iron mine at Gold Lake and put up reduction works near there. An agent was up here a few days since and took below some very fine specimens of ore, some of it assaying 90 per cent. A cubic foot in one specimen weighed 200 pounds. There seems to be nothing wanting in the locality to facilitate the production of iron in paying quantities. We trust this vast bed of mineral wealth may not be allowed to lie idle much longer.

MORE IRON FROM OREGON.—Another installment of 225 tons of pig iron has recently been received in this city, from the Oregon Iron Works.

THE third ship has gone to Vallejo to load wheat for Liverpool. Thus far this season no attempt has been made to ship in bulk.

BULLION PRODUCT.—The bullion product of the mines on the Comstock lode for the first six months of the present year were $3,955,701, showing a falling off of about $400,000, from the same time for 1868. This decrease has been occasioned by the rush to White Pine, and the disastrous fire which closed up two of the most productive mines for several weeks.

EUROPEAN IMMIGRATION.—The Sacramento *Union* very truthfully says that the great reason why so small a portion of the tide of European immigration fails to find its way this side of the Rocky Mountains, is because of the buying up of all our best farming lands by speculators, who hold them at an advance of 200 and 300 per cent. Immigrants will not pay such prices when they can do better by stopping in the Mississippi Valley. The high railroad fare also comes in as a make weight in the same direction. The railroad, we presume, will soon come down; but may we look for such a course on the part of the land speculators? We fear not.

WILD BEES are becoming numerous all through the Southern counties of the State. They are storing up immense quantities of honey, which the people of those regions are appropriating to a good use. Wild honey may soon become an important product of California.

PROFITABLE STOCK RAISING.—Gen. Bidwell has recently sold 1,000 head of stock for the snug little sum of $25,000; all the product of the past four years—a hint to those who are not in haste to grow rich.

FLOWING STREAMS have lately been struck in two artesian wells, one near Salinas City and the other in San Gabriel Valley.

SAN FRANCISCO SAVINGS.—In no city in proportion to its population, do the Savings Banks show such large deposits as in San Francisco. The number of depositors in the eight savings banks in this city and the three oldest in the interior is 35,749; showing an increase of over 2,000 in six months. The amount of deposits is $26,608,069—or an average of over $740 to each depositor. It should be borne in mind, in this connection, that all our homestead associations are of the nature of savings banks, and that through their aid there is now a larger number of real estate holders in San Francisco, than in any other city in the world—almost every male adult permanent resident, owning one or more city lots or homesteads.

INTERIOR SAVINGS.—The recent organizations of saviugs banks in the interior, has been attended with most excellent results. The first of these institutions went into operations a little over two years ago, at Sacramento. A few months later similar banks were started at Stockton and Oakland respectively; and still later at San José. Within a few months a second savings bank has been organized at Sacramento and Oakland. Organizations of the kind have also been formed at Marysville and Los Angeles. The banks of Sacramento, Stockton and Oakland are the only ones which have thus far made any public returns of their operations.

CHEAPER COAL.—There is a probability that the people of this city may soon be able to burn coal from Bitter Root (Rocky Mountains) of a better quality, and cheaper in price than it is now laid down here from Mount Diablo or Oregon. The Central Railroad Company, appreciating the great advantage which must be derived from cheap coal in developing the resources of the State, have wisely decided to make a special reduction in the freight of that commodity. This will be carried out if the Union company does not "fly the track," as they have heretofore done, in almost every effort which the Central has made to reduce charges, and to otherwise more fully reach and supply the necessities of the people on this coast.

GLOVE MAKING.—G. C. King is manufacturing a very superior kid glove, in Grass Valley.

GEO. E. ROGERS,
(Successor to G. W. Boll.)
ASSAYER,
512 California st., San Francisco.
J. A. MARS, Assayer.
Ores carefully Assayed. Gold and Silver Ores worked.
23v16-qr10pnr

CALIFORNIA
BUSINESS UNIVERSITY
204 Montgomery Street.
Full particulars regarding our Practical Course of Studie may be had by calling at the University, or by addressing
17v17-qy12p E. P. HEALD, San Francisco.

THE GOLDEN ERA.
Founded in 1852, it is the oldest Weekly Paper in the State, permanently established, and more widely circulated at home and abroad than any other on the Pacific Coast. In California, the Atlantic States, and throughout the entire field of its great and rapidly increasing circulation, THE GOLDEN ERA is universally regarded as a Literary and Family journal of unequalled excellence. Among its contributors are all the best writers on this side of the Continent.
THE GOLDEN ERA
is the most universally popular of all the Weekly journals. It presents forty-eight columns, containing the greatest possible variety of Valuable and Entertaining, Original and Selected matter. It is a welcome guest in Cottage and Cabin; the favorite at the fireside in city and country; the most useful, agreeable and altogether desirable publication for California readers and their kindred and friends in the Atlantic States, Europe and elsewhere. Every household in the mountains and valleys, the cities, towns and mining camps of California, and throughout the Pacific States and Territories, should receive and welcome THE GOLDEN ERA as a regular weekly visitor. Inspired with the genius of the age, it is progressive, and aims not so much at distinction as a newspaper, as at honorable success in its capacity of a great Moralizing and Improving influence, Exercising a positive power for good, and wielding a permanent influence, many able and eminent writers choose its columns as a means of communicating with the public. No effort will be spared to make it a thoroughly California newspaper, and worthy of the support of all classes of our citizens.
Rates of Subscription:
(Invariably in advance.)
One year.....$5.00 | Six months.....$3.00
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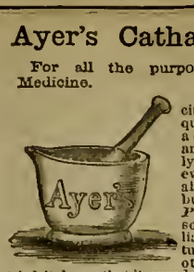
TERMS TO CLUBS:
Three copies one year.....$12.00
Five copies one year.....18.00
Ten copies one year.....35.00
An extra copy free for one year to the person sending club of ten subscribers.
Send money to our office in registered letter, or by Express, Address,
C. S. CAPP,
11v1 San Francisco.

REMOVED.
The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. 118, 120 and 122 FRONT STREET, one door from southeast corner of California street.
July 11, 1869. ELAM & HOWES.
(4v19-3m

THE CHARLES HARKNESS
Patent Wax Candles,
Have now an established reputation on this Coast. Their uniform quality, much superior to any Adamantine Candles, is
Well Known to Miners.
They burn longer and better than other kinds, and are really the most economical Candles in the market.
FREEMAN, SMITH & CO.,
110 California street.
Manufacturers' Selling Agents. 21v18-3m

Delays are Dangerous.—Inventors on the Pacific Coast should bear in mind that by patronizing our Patent Agency they can sign all necessary papers for securing patents almost immediately, thereby avoiding months of delay requisite in transacting business through Eastern agencies.

Ayer's Cathartic Pills,
For all the purposes of a Laxative Medicine.


Perhaps no one medicine is so universally required by everybody as a cathartic, nor was ever any before so universally adopted into use, in every country and among all classes, as this mild but efficient purgative *Pill*. The obvious reason is, that it is a more reliable and far more effectual remedy than any other. Those who have tried it, know that it cured them; those who have not, know that it cures their neighbors and friends, and all know that what it does once it does always—that it never fails through any fault or neglect of its composition. We have thousands upon thousands of certificates of their remarkable cures of the following complaints, but such cures are known in every neighborhood, and we need not publish them. Adapted to all ages and conditions in all climates; containing neither calomel or any deleterious drug, they may be taken with safety by any body. Their sugar coating preserves them ever fresh and makes them pleasant to take, while being purely vegetable no harm can arise from their use in any quantity.
They operate by their powerful influence on the internal viscera to purify the blood and stimulate it into healthy action—remove the obstructions of the stomach, bowels, liver, and other organs of the body, restoring their irregular action to health, and by correcting, wherever they exist, such derangements as are the first origin of disease.
Minute directions are given in the wrapper on the box, for the following complaints, which these *Pills* rapidly cure:—
For **Dyspepsia** or **Indigestion, Listlessness, Languor** and **Loss of Appetite**, they should be taken moderately to stimulate the stomach and restore its healthy tone and action.
For **Liver Complaint** and its various symptoms, **Bilious Headache, Sick Headache, Jaundice** or **Green Sickness, Bilious Colic** and **Bilious Fevers**, they should be judiciously taken for each case, to correct the diseased action or remove the obstructions which cause it.
For **Dysentery** or **Diarrhœa**, but one mild dose is generally required.
For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins**, they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.
For **Dropsy** and **Dropsical Swellings** they should be taken in large and frequent doses to produce the effect of a drastic purge.
For **Suppression** a large dose should be taken as it produces the desired effect by sympathy.
As a *Dinner Pill*, take one or two *Pills* to promote digestion and relieve the stomach.
An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.
DR. J. C. AYER & CO., Practical Chemists,
LOWELL, MASS., U. S. A.
Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18eow1m

SULPHURETS;
What they are;
How Assayed;
How Concentrated;
And How Worked;
With a Chapter on the
BLOW-PIPE ASSAY OF MINERALS.
By WM. BARSTOW, M. D.
Published by A. Roman & Co., San Francisco.
For sale at this Office—Price, One Dollar.
With the aid of this Book, the miner can assay his own ores, requiring but few materials, etc., except such as are generally to be found in the interior towns. 21v15tf

Pacific Mail Steamship Co's
STEAMSHIPS FOR
NEW YORK, JAPAN AND CHINA.
LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.
On the 10th, 17th and 30th of each month that has 30 days.
On the 10th, 18th and 30th of each month that has 31 days.
When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding; when the 17th falls on Sunday, they will leave on the Monday following.
Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.
Departure of the 17th or 18th is expected to connect with the French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America. Through tickets can be obtained.
The following Steamships will be dispatched on dates as given below:
July 9—GOLDEN CITY.....Capt. Wm. F. Lapidge,
Connecting with ALASKA, Capt. Gray.
July 17—MONTANA.....Capt. E. S. Farnsworth,
Connecting with HENRY CHAUNCEY, Capt. Connor.
July 30—COLORADO.....Capt. Wm. H. Parker,
Connecting with ARIZONA, Capt. Maury.
Passengers berthed through. Baggage checked through. One hundred pounds allowed each adult.
An experienced Surgeon on board. Medicine and attendance free.
These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.
Through Tickets to Liverpool by the "Inman" and "National" Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco, where may also be obtained orders for passage from Liverpool or Southampton to San Francisco, either via New York or St. Thomas—if desired an amount of £10 to £20 will be advanced with the above orders. Holders of orders will be required to identify themselves to the Agents in England.
For Merchandise and Freight to New York and Way Ports, Company's Form of Bill Lading only used.
No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.
The Steamship GREAT REPUBLIC, Capt. Cavarly, will be dispatched for YOKOHAMA and HONGKONG on SATURDAY, July 3d, 1869, at noon connecting at YOKOHAMA with the steamer NEW YORK for SHANGHAI. Shippers of freight to China or Japan are requested to mark on each package its destination.
For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.
OLIVER ELDRIDGE, Agent.

TRADE MARK.

New Almaden Vichy Water,
(CALIFORNIA VICHY WATER.)
FROM THE SPRINGS,
NEW ALMADEN,
Santa Clara County.
F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.
OFFICE, 508 JACKSON STREET,
GENERAL DEPOT:
Corner of Jackson and Montgomery streets.
This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.
It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of the Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.
California Vichy Water is used with success in many cases, such as:
Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.
(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.
PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.
Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's
Claims and Mill,
Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are Steam Hoisting Works, capable of hoisting from a depth of 300 feet. A force of thirteen men only are required to keep both mill and mine running regularly.
On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which factgoes to prove that a heavy deposit of ore was once contained in the croppings of these shutes, which, by all former and present theories of deep mine workings, came from below, indicating that when sunk upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.
This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.
The last level 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $1 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.
Now I propose to sell two thirds of this valuable property for $16,000, cash; and any party who desires to purchase a property of this kind—which theory has proven that it requires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.
For any further particulars, direct by letter to Wm. Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.
22v18tfqr WM. BOSWORTH.

A Long Desired Article
FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using
CAMILLE CHAMPNO,
which not only does away with the poor soap so offensive to use, and so injurious to the hair, but it cleans the head, strengthens and beautifies the hair, preserves the color and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERTON & LUELLING, 773 Mission street, San Francisco, Cal.
HEATHFIELD & BOGLE, Wholesale Druggists, 206 and 208 Battery street, San Francisco, Sole Agents for the Pacific Coast. 24v18-3m

The Chinese Mining Tax.—The Chinese miners of Boise County, Idaho, have made up a case to test the validity of the $5 monthly, foreign miner's tax. Able counsel has been engaged on both sides; and the case, in all probability, will not stop short of the U. S. Supreme Court. In the meantime the defendant (County Foreign Tax Collector) has been restrained, by order of the Court, from any farther collections. The objections to paying this tax are based on the Burlingame treaty. This will, in all probability, prove to be one of the most important lawsuits ever tried on the Pacific Coast; and the decision in the case will be looked for with much interest, throughout all the States and Territories west of the Rocky Mountains. The mining counties are especially interested therein; as an adverse decision will fall heavily upon their pecuniary resources, already, in many cases, at a disastrously low ebb.

Vallejo.—A correspondent sends us a few notes from Vallejo, from which we infer that times are quite lively there, just now. The Grain Elevator, on which that growing, busy town especially prides itself, is working to the satisfaction of all parties. The government works, at Mare Island, are in full blast, over 1,000 men being employed in the various departments. The hotels, of which there are three or four, are full to overflowing, Our correspondent was compelled to pay a dollar for stretching himself for the night upon a lounge two feet too short for his limbs; when, as he afterward learned, excellent accommodations might have been had for less price at either the "Capital" or "Washington." He made a note of the fact for the benefit of other readers of the *Press* who might travel that way.

The Coming Blasting Agent.—Perhaps gun cotton will yet be fixed upon as, all things considered, the least objectiouable of the explosives. It can he burned loose in the hand without danger; while if confined, and exploded hy percussion, its dynamic power is equal to that of nitro-glycerine. It can be transported without fear of prematnre explosion, and will not freeze. This last recommendation will have force with those who recollect the several fearful accidents which have occurred from the heating of nitro-glycerine cans, in order that their conteuts may flow more readily.

Off for a Trip.—James Pollack, Esq., Superintendent of the Stone Dry Dock at Hunter's Point, in this city, goes overland on a brief business and pleasure trip to the Eastern States. Mr. Pollack is one of our foremost and persevering master mechanics. His services have necessarily been very active in building aud getting into succesful operation here the finest etoue dock in the United States, and we are pleased to note that he is taking a short respite away from his exceedingly vigilant post of duty.

Artificial Ice Manufacture in New Orlbans is pronounced a complete success. The establishment turns out 1,344 cakes of ice eighteen inches long, twelve broad and two thick, at each charge. The ice is said to be much firmer than most natural ice. Tho cost is not giveu, but the factory is a joint enterprise, and is said to be paying well.

Sacramento Female Seminary.—We have received a copy of the annual catalogue of the Sacramento Female Seminary for 1868-9. This school, judging from the number of its members, must be in a flourishing condition. We notice 105 names of pupils in the catalogue, without taking into account the juvenile department.

The French Cable has beeu successfully laid, and congratulatory messages have been exchanged through it betwecn the Emperor Napoleou and President Grant.

New Incorporations.

Elko and Idaho Toll Road Co.—Nev., July 19th.—Capital stock—$25,000, divided into 500 shares. Trustees—S. B. Wyman, — Carter W. Oppenheimer, J. D. Treat; Superiuteudent, O. R. Johuson.

Southern S. M. Co.—White Pine, July 17th.—Capital stock $600,000, divided iuto 12,000 shares. Trustees: E. Trask, (President), James W. Pierson, (Secretary), A. Bateman, George W. Rose and W. W. Angel.

Calcutta S. M. Co.—White Pine, July 19th.—Capital stock $1,200,000, in 12,000 shares. Trustees: Washington Ayer, F. P. Swett, James D. Rogers and Ira G. Hoitt.

Contra Costa Water Co.—July 28th.—Capital, $500,000, in shares of $100 each. Trustees—Horace W. Carpentier, George Leviston, Jr., and E. R. Carpentier.

Meetings, Elections, Etc.

White Tract Homestead Association. July 27th.—Trustees: J. E. Ayer (President), J. S. Taber (Treasurer), and E. E. Harvey. Secretary, J. M. Buffinton.

City Hall Homestead Association. July 26th.—Directors: John Regan, Max Popper, Wm. Monahan, T. P. Riordan, Owen McMahon, M. Lewis and B. B. McAllister.

Minerva S. M. Co.,—White Pine, Jnly 19th.—Trustees: F. S. Thibault, C. Deane, E. W. Hall, P. G. Venard; Secretary, R. Wegener.

Bucklin S. M. Co.—July 19th.—Trustees: J. W. Bucklin, R. Sherwood, David Dwyer, T. B. Lewis, Alexander Blane.

Golden Rule M. Co., Tuolumne Co., Cal.—Trustees: W. Bosworth, J. H. Turney, J. T. Boyd, R. L. Pasteur and E. V. Hathaway.

Omnibus R. R. Co.—July 29th.—President, J. O. Eldridge; Vice-President, Geo. W. Beaver; Treasurer, Wm. H. Lyon; Secretary, James O'Neill; Superintendent, John Gardner.

Gold Run.—A correspondent writing from Gold Ruu, near Golconda Station, Humboldt county, Nev., says the veins of that district can he traced for miles. They are several in number. Everywhere along the line of the veins, and below their outcrop, are to be seeu large masses of "trachyte," which have evidently come from the vein itself. Our correspondent infers that the veins are true fissures. Iu some places the vein matter appears to have flowed from the vein down the hill, a hundred feet or more. It is necessary that observations of that character should be made with a great deal of care before venturing upon conclusions. He adds that the veins thero are well-defined, and show a large quantity of low-grade ores, and thinks that when the White Pine excitement gets sobered down to working mines for their intrinsic value, Gold Run will be found valuable for the quality of its ores and the permanency of its mines. We should be pleased to receive the specimens to which our correspondeut alludes.

High-Handed Acts at White Pine.—The members of the Miners' Union at White Pine visited all the principal mines of that locality on Wednesday last, and the $4 men were everywhere driven out. Even miners working on coutract at miues where other men were working for $4, were compelled to stop work. The men working in the blacksmith shop under similar circumstances, were also made to stop. Men were compelled by force to fall in and "march" with the members of the Union. This information was received after our White Pine Summary had gone to press.

Steven's Electro-Magnetic Settler.—We notice the statement in the Shermantown *Telegram*, that one of the above-named machines has been put up in the new mill of Logan, Lucas & Co, at Swansea, White Pine District. This mill has just been started, and will, probably, says the *Telegram*, be kept constantly employed.

Spots on the Sun.—No less than thirty three spots were counted on the suu by the celebrated astrouomer Father Secchi, on the 7th of June. A most unusual number.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

For the Week Ending July 20th.

Combined Harrow and Cultivator.—William J. Funk, Portland, Oregon, assignor to himself and Harrison B. Oatman, same place.—92,714.

Watch-Wheel Holder.—August Wilhelm Kientoff, Oakland, Cal.—92,729.

Curtain Fixture.—J. W. Foard, San Francisco, Cal.—92,812.

Animal Trap.—Daniel Harwood, Dutch Flat, Cal., assignor to himself and Seth White, same place.—92,823.

Ore Concentrator and Endless Sluice-Blanket.—Charles D. Smith, Drytown, Cal.—92,893.

This invention relates to a new and improved concentrator for separating the richer portions of pulverized ore from the gangue or refuse matter, after it has passed through the mill, aud consists of an endless belt covered with strips of blanket with alternate strips of metal, stretched by two drums, one at each end, and supported by a third in the middle. This belt moves toward the stream of water bearing the ore. One of the drums is adjustable, so that the belt may be inclined at any angle desired. The lighter portions of the stuff flows off at the lower end, while the heavier, being carried over the upper drum, are washed off by a stream of water which is brought to bear upon the helt from beneath. A series of hammers are arranged on the interior of the belt, so as to strike it, and by the jarring produced causes any of the sulphurets which may have clung to the belt to fall off. We shall probably give a more full description of this invention at a future time, accompanied by an illustration.

Fleece-Bundling Apparatus.—Jas. Walton, Roseburg, Oregon.—92,916.

Sleeping Car.—M. Allison Wheeler, San Francisco, Cal.—92,919.

Foreign Incorporations.—The following is from the *Inland Empire*, White Pine, July 24th: "The last Legislature of this State enacted a law providiug that 'every incorporated company or association created and existing under the laws of any other State, or any foreign Government, shall file in the office of the County Recorder of each county of this State, wherein such corporation is engaged in carrying on business of any character, a properly authenticated copy of their certificate of incorporation, or the Act or law by which such corporation was created, with a proper certificate of the officers of the corporations, as to the genuineness of the same, aud to each of such certificates shall be appended a duly certified list of the officers of such corporation.' The law went into effect July 1st, and the penalty for a non-compliance with its provisions is $500."

The journal aforesaid gives the names of 93 incorporations which have complied with this law, as appears by the books of the Recorder.

Address Wanted.—We are desirous of communicating with Allen Oliver, lately of Jamestown, Tuolumne County California. tf

Returned.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco Every picture warranted to give satisfaction. 10v18 6m B. F. Howland.

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Cholera—How to Cure it.—At the commencement of the diarrhœa, which always precedes an attack of the cholera, take a teaspoonful of the Pain Killer in sugar and water (hot if convenient), and then bathe freely the stomach and bowels with the Pain Killer clear. Should the diarrhœa or cramps continue, repeat the dose every fifteen or twenty minutes till the patient is relieved. In extreme cases two or more teaspoonfuls may be given at a dose. The Pain Killer, as an internal remedy, has no equal. In cases of Summer Complaint, Dyspepsia, Dysentery, Asthma, it cures in one night by taking it internally, and bathing with it freely. Its action is like magic when externally applied to Bad Sores, Burns, Scalds, and Sprains For Toothache, don't fail to try it. In short it is a *Pain Killer*.

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

REOINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents. jy1m

New Advertisements.

Office of California Powder Works,
San Francisco, July 15, 1869.

NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

JOHN P. LOHSE, Secretary.
5v19-3m **314** California street.

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QUARTZ OPERATOR'S HAND-BOOK.

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WHEELER & RANDALL.

San Francisco, 1865.

A cheap and handy book for Quartz Prospectors, Millmen, and Amateur Assayers.

This little work, of 130 pages, although partly devoted to a discussion of limited interest to general readers, contains instructions in the WORKING AND ASSAYING OF ORES, AND TABLES FOR REFERENCE, which renders it quite desirable and of frequent service.

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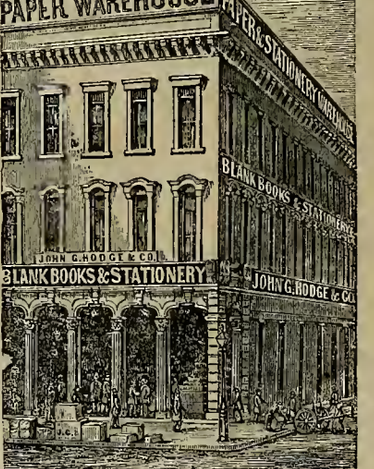

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Information for Inventors and Patentees.

AN EXTRACT

From the American and Foreign Patent Agency Circular of the Mining and Scientific Press, Dewey & Co., Publishers.

Assignments.

We make out assignments in the most substantial legal and improved forms, record the same in the Patent Office at Washington, and return the papers to the assignee, at a total cost of $5.

Assignments of extra length or of a special character, will be made out and recorded on the most favorable terms.

Assignments already made will be examined and opinions rendered regarding their validity, and the assignments recorded, when desired, for a moderate fee.

Home Counsel.

We are frequently consulted by persons who have rejected cases which they sent months previous through distant agencies—(hastily paying their first and last government fees, expressage, and extraordinary charges of agents)—when we could have shown in the start precisely similar drawings and descriptions in the Patent Office Reports in our office, thus saving such applicants their useless expenditure of money and their long suspense.

We invite the acquaintance of all parties connected with inventions and patent right business, believing that the mutual conference of legitimate business and professional men is mutual gain. Parties in doubt in regard to their rights as assignees of patents, or purchasers of patented articles, can often receive free advice of importance to them, from a short call at our office.

Interferences.

INTERFERING APPLICATIONS are conducted with spirit and ability on the most favorable terms, by DEWEY & CO. It sometimes happens that an applicant finds his invention has been patented by another, but more recent discoverer. In such cases the prior discoverer can obtain full right to the invention if he can produce tangible evidence of priority.

When patentees are threatened with interference they should consult able and responsible agents before they either allow themselves to be bucked down from their rights, or trespass upon the rights of others. We will always counsel and advise in such cases upon the most reasonable terms—often saving clients heavy damages and exorbitant fees.

Copies of Patents.

Full copies of U. S. Patents will be furnished in the shortest time possible, at favorable rates.

Copies of the claims of U. S. Patents will be furnished without delay, from the reports in our office, at trifling expense. State the name of patentee and assignees, and date and No. of the patent, if possible.

Copies of Patents in foreign countries expeditiously furnished at moderate rates.

EXTENSIONS.—U. S. Patents issued prior to 1861, are subject to extension for seven years, provided some ostensible reason can be shown the Government for so doing. Patentees who have, from circumstances beyond their control, been deprived of the full benefit of their patents for any considerable time, are usually successful in obtaining an extension of the same, when presented through our agency.

INFLUENCE AT WASHINGTON.—No inventor can possibly have better facilities or more influence (through friends or agents, at Washington or elsewhere), to secure their patents sooner or more surely, than ourselves. Our influence at Washington is unrivalled, so far as success for applications from the Pacific States and Territories are concerned.

Illustrate your Inventions.

One of the best means—and the cheapest, too—for eliciting attention to a new invention, is that of illustrating and describing it in the columns of the MINING AND SCIENTIFIC PRESS. To do this in the case of a meritorious improvement (and none other will be accepted), will cost our patrons no more than the price of a first-class engraving.

Superior Engraving Done.

We also take especial pains in furnishing engravings and electrotypes of superior merit, of all kinds, at fair rates, and tender our patrons the benefit of our practice and experience, by advice and assistance, in getting up their circulars, advertisements, etc.

With a poor representation we desire to have nothing to do, as it would be calculated to injure both the inventor and ourselves.

Too many ingenious inventors lose the product of their genius and labor by not bringing their improvements conspicuously or plainly enough before the public—the general reading public.

☞Our Illustrated Pamphlet, from which the above is an extract, will be furnished free on receipt of postage stamp. Confidential advice given, and every legitimate branch of Patent Soliciting business promptly and faithfully executed, by

DEWEY & CO.,

Publishers Mining and Scientific Press, 414 Clay street, San Fraacisco.

Kustel's Treatise on Concentration of all kinds of Ores.

Including the Chlorination Process for Gold-bearing Sulphurets, Arseniurets, and Gold and Silver Ores generally. Illustrated with 120 Diagrams on 7 Plates.

CONTENTS:

I.—INTRODUCTION.

1. The Dressing.—Dressing of Ores; Principles of Dressing; Division of Dressing.

2. The Separation.—Separation of Gangue from Ore in the Mine; Dressing of Ores ontside the Mine; Separatiou by Hammers; The Ragging; The Spalling; The Cobbing; Separation by Hand; The Picking.

3. Cleansing and Sizing Contrivances.—Washing and Sizing; Stationary Apparatus; The Sluice; The Kiln; The Step Sluice; Movable Machines; The Hand Riddle; The Rocker; The Circular Hand Riddle; Swinging and Jarring Riddles; The Jarring Riddle.

4. Rotary Sizers.—The Trommel or Drum; Cylindric Trommel; Prismatic Trommel; Conical Trommel; Combined Trommel; The Sifting Wheel; Sizes of Grains for Jigging.

II.—REDUCTION.

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3. Details of a Battery.—The Mortar; Stem or Lifter; Shoe or Pestle; Socket or Head; Tappet; California Tappet; Cams—Wooden Cams; Iron Cams.

4. Speed, Curve and Order of Lifts.—Limit of Speed in Crushing; Construction of the Cam Curve; Order of Successive Stamp Lifts; Hanging-up of Stamps.

5. The Discharge of Batteries.—The Discharge in Dry Crushing—with Grates; without Grates; with Sieves; Dust Chambers; The Discharge in Wet Crushing — the Grates and Screens.

6. Feeding of Batteries.—Hand-Feeding; Stationary Hoppers; Movable Hoppers; Quantity of Water for Crushing; Remarks on Speed and Weight of Stamps.

7. Reduction by Rolling Mills.—Construction of Rollers; The Frame; Feeding of Rollers; Remarks.

8. Grinding.—The Arastra or Tehama; The Edge or Chili Mill; Ball Mills; Lundgren's Pulverizer: Cylinder Mills; Ferrand Mill; Hopkins' Grinder; Horizontal Mills; Iron Pan Grinders.

9. Pans with Plane Mullers.—The Common Pan Grinders; Tub Grinder; Bartolo's Grinder; Knox's Pan; Varney's Pan; Wheeler's Pan; Union Grinder; Moore's Qnartz Grinder; Gaston's Grinder.

10. Pans with Conical Mullers—Hepburn & Peterson's Pan; Belden's Pan; Baux & Guiod's Grinder.

11. Pans with Tractory-Conical Mullers.—Excelsior Pan; Wheeler & Randall's Pan; Excelsior Continuous Grinders.

12. Pans with Perpendicular Mullers.—The Centrifugal Ore Grinder; Varney's Qnartz Grinder.

III.—CONCENTRATION.

Concentration of Reduced Ore.—Division.

A. Concentration of Ore Grains (Jigging Stuff).—The Principle; The Jigging.

2. Movable Jiggers.—The Movable Jigger.

3. Stationary Jiggers. — Hydraulic Jigger; Petherick's Separator; Stationary Jigger.

4. Continual Jiggers. — Percussion Jigger, Setz Herd); Continnal Cylinder Jigger; Continnal Jigger; Hydraulic Coutinnal.

5. Rotary Machines.—The Rotating Cylinder (Strom-setz Maschine); Rotating Wheel (Setz-Rad); The Dolly Tub; Auferman's Dry Jigger.

B. Concentration of Ore Sands and Slimes.

6. Assorting of Sands.—The Labyrinth; Borlace's Slime Separator; Ph. Hofmann's Separator; Rittinger's Funnel or Pointed Box; Rittinger's Spitz-Lutte.

7. Feeding of Concentrator.—Feeding-Boxes; Stationary Feed-Box; Rotating Feeder.

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9. Percussiou Tables. — Percnssion Tables; German Percnssion Table; Continnal Percussion Table; Hunter's Continnal Percussion Table; Varney's Percnssion Buddle.

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IV.—SPECIAL CONCENTRATION.

1. Concentration of Gold Ores.—Concentration of Gold Ores; Amalgam of Gold Quartz; Amalgamation and Griuding; Combined Concentration and Amalgamation; Treatment of Concentrated Stuff.

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3. Concentration of Lead and other Ores.—Concentration of Lead, Copper and other Ores; Value of Ores for Concentration.

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Chlorination.—Damping of the Roasted Ore; Sifting; Production of Chlorine Gas; Lixiviation; The Precipitating Vat; The Precipitation; Cost of the Chlorination Process per ton of Ore; Remarks.

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CERTIFICATES:

United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs A. S. Hallidie & Co, Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT.

Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S. Hallidie & Co.—Gents.:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gauthier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,

A. S. HALLIDIE & CO.,

18v18-9p **519** Front street, San Fraacisco

New Mining Advertisements.

Hornet Silver Mining Company.—Location of Works: White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of July, 1869, an assessment of ten (10c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth (8th) day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the thirtieth (30th) day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. S. MARTIN, Secretary.

Office, No. 11 Hayward's Building, 419 California street, San Francisco. jy31

Silver Sprout Mining Company.—Location of Works and Mines: Kearsarge District, Inyo county, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, 419 California street.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINCARD, Secretary.

Office, 408 California street, San Francisco. jy31

Mining Notices--Continued.

Daniel Webster Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. jy3

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Friday, the twenty-seventh day of August, 1869, and the sale thereof until Thursday, the sixteenth day of September, 1869. By order of the Board of Trustees.

jy31 O. D. SQUIRE, Secretary,

Cordillera Gold and Silver Mining Company.—Location of Works: Morelos District, Chihuahua, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of July, 1869, an assessment of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 321 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY B. REED, Secretary.

Office, 321 Washington street, San Francisco. jy24

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five (5c.) cents per share was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DuPRAT, Secretary.

Office, No. 502 Montgomery street, Room No 3, San Francisco, Cal. jy27

George Washington Silver Mining Company. White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of ten cents per share (or $1 per fool), was levied upon the capital stock of said Company, payaable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth day of August, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.

Office, Stevenson Building San Francisco. jy10

Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty first day of July, 1869, an assessment of two dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the thirtieth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, Room 37 New Merchants' Exchange, California street, San Francisco. jy24

Marlborough Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DuPRAT, Secretary.

Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy24

San Fernando Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of the Stockholders of the San Fernando Tunnel and Silver Mining Company will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 3 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.

Office, No. 16 Stevenson Building, corner Montgomery and California streets.

San Francisco, July 1, 1869. jy3

Sedgley Tunnel and Silver Mining Company. White Pine Mining District, State of Nevada.

The first Annual Meeting of the Stockholders of the Sedgley Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 1 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.

Office, No. 16 Stevenson Building, corner of Montgomery and California streets.

San Francisco, July 1, 1869. jy3

Thunderbolt Mill and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of five cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twelfth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth (30th) day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.

Office, Stevenson Building, San Francisco, Cal. jy10

White Cloud Tunnel and Silver Mining Company, White Pine Mining District, State of Nevada.

NOTICE.—The first Annual Meeting of Stockholders of the White Cloud Tunnel and Silver Mining Company, will be held at the office of the Company, on MONDAY, the second day of August, 1869, at 2 o'clock P. M., for the purpose of electing Trustees to serve for the ensuing year, and for the transaction of any other business that may properly come before the meeting.

GEORGE L. SMITH, Secretary.

Office, No. 16 Stevenson Building, corner of Montgomery and California streets.

San Francisco, July 1, 1869. jy3

Yosemite Mining Company, Humboldt County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of July, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco.

Any stock upon which said assessment shall remain unpaid on the seventh day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-fourth day of August, 1869 to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary *pro tem.*

Office, No. 220 Clay street, San Francisco. jy10

The Mines and Mills About Treasure City.

[Written for the Mining and Scientific Press.]

EDITORS PRESS:—The regular summer showers, which occur about this time, have commenced, and we shall be regaled with their cooling influence for the coming month at least. They last but an hour or two each afternoon, and after laying the dust and clearing the atmosphere, we are treated to the most delightful sunsets on the American continent.

Messrs. Pierce and Walker, connected with the Chicago commercial party, are sojourning with us. They have visited a number of the principal mines, among them the Eberhardt, Aurora Consolidated, Chloride Flat, and the Iceberg, Nevada, Summit, Post Hole and Industry of the Treasnre Hill M. and M. Co. They express themselves thoroughly satisfied with the great wealth of the district, and have met the city and county officials and exchanged views with them. I expect they will both invest in our mines, and also secure considerable trade from our people.

Several new and rich discoveries have been made since my last, among them a large body of rich ore in the Pocotillo. The company started an open cut into the old body of ore, and iu the very bottom of this cut found the ledge going down, carrying a mass of exceedingly rich chloride with some horn silver. This ore will produce at least $300 per ton. The Buttercup, below Hamilton, has exposed a fine body of horn silver, worth upward of $1,000 per ton, and the Charter Oak, of the White Pine M. aud M. Co., has exposed a body of purple, or, properly speaking, pure chloride of silver.

New Discoveries.

We have now two outside excitements. The first is Mineral Hill District, situated between Argenta and Elko, in Pine Valley. This district is proviug extensive, and furnishes ore in large quautities, which will produce $500 per ton. I hope to have the particulars in a few days. The second was discovered last week, and is about twelve miles from the Hay Ranch Station, on the stage road to Austin. The discoverers brought in ore which assayed $10,000 per ton, and represent that the mountains are full of it. Over 100 men have gone out to examine into the matter, and to-morrow we shall know how much truth there may be in the statement. It is but fifty miles west of this place, and a short time will suffice to prove it.

New Mills.

The Metropolitan mill, after great trouble has succeeded in obtaining a supply of water from the Silver Springs Water Co., and will start up in a few days. The California Co. have nearly all of their machinery on the ground, and are sinking for water some 150 feet below the site of the mill. I should think men would learn that water must be had to make a mill a success; but they are building a mill much finer than most of the parlors on the coast, and should they fail in finding a larger supply of water than I think they will, it will be of but very little use for reduction purposes and a source of less income. The Treasure Hill mill has purchased the Hamilton spring, and now ruu their whole twenty stamps, wet crushing about forty tons per day. The Coover mill, also incorporated, as the Treasure Hill, has secured the services of T. McMasters, the best amalgamator in the State, and the first to successfully reduce the ores of this district by the process now generally used here. At the time the Manhattan lost several thousand dollars by guaranteeing eighty per cent. on the Eberhardt ore, McMasters was getting as high as ninety-two and ninety-three per cent. from the same ore at the Monte Cristo mill. Jeremiah Miller has taken the White Pine mill, lately leased by General Page, and will start it again on Monday for the benefit of his company.

The injunction laid by the Aurora Consolidated Co. on the Earl mine will be decided to-morrow by Judge Beatty, and no doubt this will decide a great many suits now pending.

The Pogonip & Othello is improving very fast, and bids fair to become the best mine in the district. They have several hundred tons of ore out that will produce a profit; their mine is well opened, and they could declare a dividend in thirty days if desirable.

Mount Ophir continues to improve; but as no quantity of ore has been worked from that portion of the district, I shall wait the proof. Yours, etc., G. B. E.

Treasuro City, Nev., July 18, 1869.

Machinists and Foundries.

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13vl0qy-tf

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STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18vl6tf

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. GALLAGHER. J. H. WEED V. KINOWELL.
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BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco, Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.
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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.
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LIGHT AND HEAVY CASTINGS,
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Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

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Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their Inventions. 1vl6tf

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CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

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JOHN N. RISDON, President.

Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 2ivl7-qy

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Mill Picks, Sledges, Hammers, Picks,

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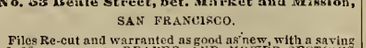

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New and second-hand

Engines and Boilers,

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Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

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AMALGAMATION WITHOUT ROASTING

BY CHAS. H. AARON,

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This Pamphlet contains 8 pages of concisely written matter, by a practical working Metallurgist.

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These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the mutler forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, 220 Fremont street,

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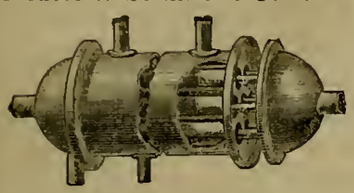
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 6, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

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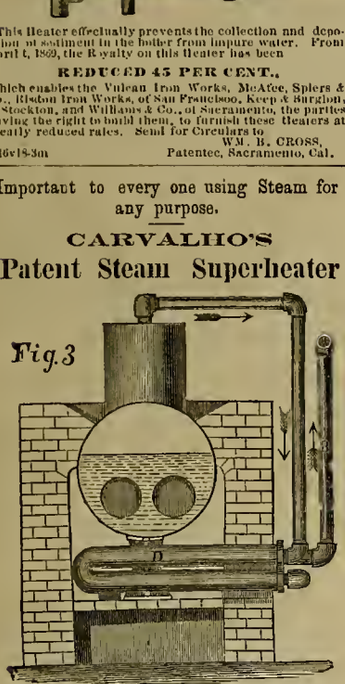
Important to every one using Steam for any purpose.

CARVALHO'S
Patent Steam Superheater

Fig. 3



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1868.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CRICKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

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"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves fuel at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 55° deg—an increase of 20° deg."

CARBW MANUF. CO, So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

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ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

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CONTRA COSTA LAUNDRY, Oakland, July, 1868

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HAVILAH M. CO., Cal., August, 1868

"Superheater causes a use of 40 lbs. steam instead of 60 lbs.; use much less water, and there is a saving of fuel." (2 sets.)

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"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works letter."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

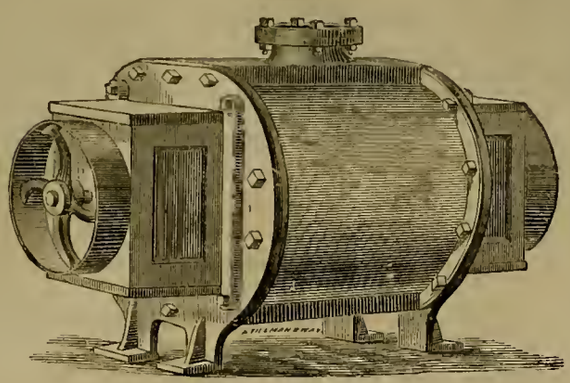
Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.
JOHN L. CONSTABLE, Engineer. 25v18tf

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

MANUFACTURED BY KEEP & BARGION,

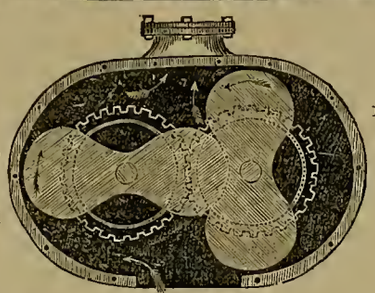
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 21, 1868; and Oct. 6, 1868.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



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Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

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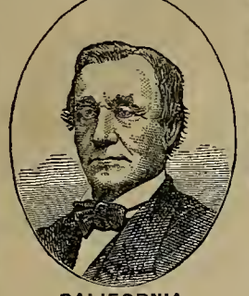

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For full directions read caretully the circular around each bottle.

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DR. JOSEPH WALKER'S

VINEGAR BITTERS.

SAN FRANCISCO, Cal., Jan., 1869.

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Four years ago I was, what I thought, "a used up man," which was also the opinion of my friends and acquaintances.

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One day I was near a camp of Indians, and found them gathering and picking herbs. I inquired what they used them for, and they told me. I then went to experiment on a compound which I perfected and commenced taking, and to my utter surprise, in three weeks was able to attend to my business, and after taking it eight months I felt better than I ever did in my life, and considered myself well. Many persons who knew my former condition were surprised when they saw how well and hearty I was, and came to me for the medicine for themselves and friends. In fact, with my small means of manufacturing, I could not supply the demand. I had to put them up in jugs, junk bottles and anything I could get, and found they produced such astonishing effects upon all diseases, that I thought it my duty to put them within the reach of all suffering humanity.

I moved to San Francisco, and commenced putting them up, calling them J. WALKER'S CALIFORNIA VINEGAR BITTERS.

I have disposed of hundreds of thousands of bottles, and, to my knowledge, not a single person who has taken them but it has helped or cured. On women the effect is magical, making the old fresh and vigorous, and giving to the young life and ambition.

Now I assert without fear of successful contradiction that there is no disease these Bitters will not cure. I know that there are hundreds that will doubt this, but to them I say, bring me the case, and if I do not cure them with my Bitters, I will forfeit $100, providing the lungs are not too far gone, or the bones not destroyed by minerals or other means. People may call me a humbug, and doctors may cry out against me, and well they may, for their occupation is gone.

In conclusion, to the afflicted let me say, give my Bitters trial; it is all I ask—they will speak for themselves.

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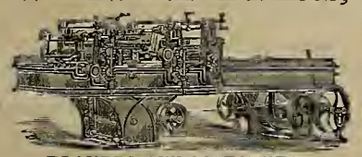

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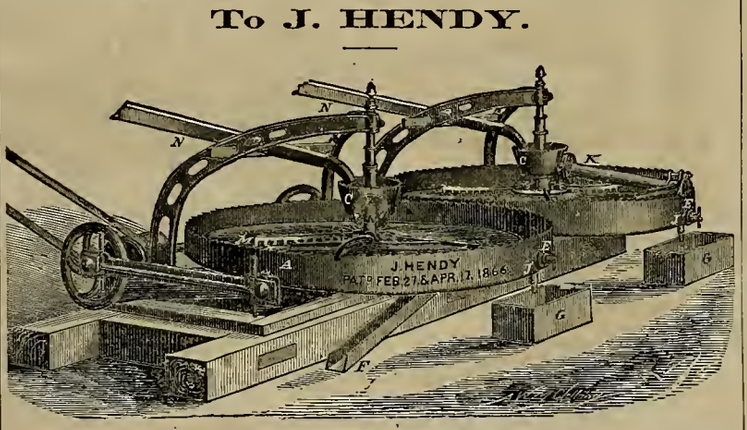
AWARDED BY THE
MECHANICS' INSTITUTE, 1868,
ALSO AT THE STATE FAIR FOR 1868,
To J. HENDY.



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By recent alterations in the patterns for these machines, they are now made

Stronger and more Durable than Ever.

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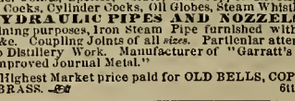
Respectfully yours, J. H. CROSSMAN, Supt. N. S. Minc.

J. HENDY, Patentee.
Office at Union Iron Works.

13v17tf

W. T. GARRATT,
City
BRASS AND BELL FOUNDER



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For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

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Saw Smithing and Repairing
ESTABLISHMENT.

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They have proved themselves to be the most durable and economical Saws in the World.
EACH SAW IS WARRANTED IN EVERY RESPECT.
Particular attention paid to construction of
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MINING AND SCIENTIFIC PRESS.

Subscription, $5 Per Annum. Single Copies, 10 Cents.

A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, AUGUST 7, 1869. VOLUME XIX. Number 6.

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Ernst's Rotary Roasting Furnace.

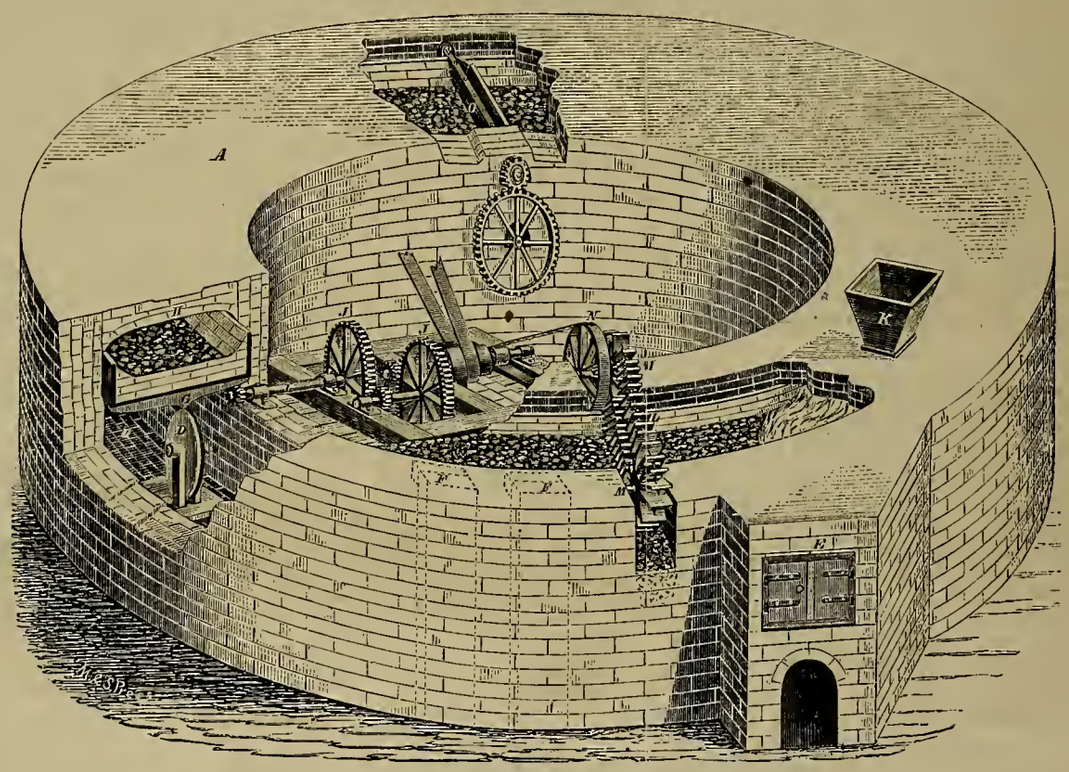
We herewith illustrate the form and working plan of Mr. F. Ernst's Roasting Furnace, patented some twelve months since through the Mining and Scientific Press Patent Agency.

This is a mechanical furnace, which does away entirely with manual labor, excepting a fireman. It charges, roasts, stirs, and discharges the ore by a very simple mechanical contrivance,—in fact, performs all the operation required in the oxidation or chlorination process of roasting gold or silver ores.

The following is a description of the accompanying engraving:

The ore is taken by means of an elevator from the battery, and is discharged constantly and regularly into the hopper, *K*, from whence it reaches the rotating hearth, *G*. This hearth consists of a cast iron orbicular ring paved or lined with bricks, and revolves on a series of iron rollers, *D*, and is kept continually in motion by means of the gearing, J. This gearing has two gear wheels, three feet in diameter, and pinions to regulate the speed from the cone pulley, increasing or diminishing it to conform to the required slow motion of the hearth, *G*. The hearth so charged and running constantly carries the ore into the first heat, which is next to the flues, and so passes all the different temperatures of the furnace, thus effecting a very uniform heating and chemical action on the ore; at the same time it has also to pass the stirrers, of which there are different kinds,—stationary and movable ones,—the number and speed of the latter varying according as the ore contains more or less sulphur. The movable paddle-stirrers are shown at *O*. These movable stirrers are connected with the gearing under the iron bed of the hearth, *G*, as shown at different points, till it passes the fire-bridge, where it receives its ultimate and highest heat, and is then discharged by the discharging apparatus. This discharging apparatus consists of two chain or rag wheels, *M*, *M*. These two chain-wheels drive a double endless chain with inserted plates of iron (scrapers). The chain hanging loose underneath between the wheels, draws these iron plates through the cavity of the hearth, and so discharges constantly the roasted ore.

To keep the current of air constant throughout the whole length of the furnace, the arch over the hearth decreases slightly from the fire-bridge towards the flues. For concentrated sulphurets it may be advantageous to increase the circumference of the hearth. The advantages claimed as attainable from the use of this machine are—the doing away with a large portion of the costly hand labor ordinarily required, and the better and more thorough accomplishment of the same by machinery. A great saving of fuel, not only through the length of the hearth, but also for the reason that all the gases which are lost by other furnaces, are economically employed in this as a substitute for other fuel.



ERNST'S ROTARY ROASTING FURNACE.

The furnace is so constructed that the large access of air required for the oxidation of the ore, in addition to that demanded for the consumption of these gases, does not operate to materially lower the temperature in the furnace. When the ore in this furnace is once desulphurized, the gases cannot form any new combinations with the ores or metals therein, for the reason that while the currents of air and gases are moving to the rear, the furnace hearth is constantly advancing in an opposite direction.

The construction of this furnace is of the simplest kind, and all the necessary castings can be easily transported even on mule-back. The loss of the silver by sublimation in present furnaces, it is claimed, is avoided in this, as the silver condenses before reaching the flues; the distance being great, and the heat diminishing gradually until the gases reach the point of final exit.

We consider this new furnace well worthy the attention of metallurgists and mine holders. Mr. Ernst is an experienced operator in the reduction of ores, and his efforts for years have been directed to improvements for the economical and perfect treatment of gold and silver ores.

Liberal terms are offered by the patentee to parties who desire to use his improvements. Further information can be had by addressing F. Ernst, San Antonia, Lower California, Mexico; or by calling upon H. W. Schmidt, Druggist, Kearny street, corner of Sacramento, San Francisco—or at this office.

Earthquakes.—Late dates from Lima speak of the publication in the South American journals of a prophesy by a German *savant* by the name of Falk, to the effect that a series of earthquakes is about to take place in Ecuador, Peru, and Chili. They will commence on the 10th of August; and be followed up on the 10th of September, or October, by a shock more violent than any yet recorded. It is said that many families are preparing to leave the country for the season. A Valparaiso paper, in alluding to the same prognostication, says that several shocks of earthquake have already been felt.

The Oxy-hydrogen Light.—The *Gas-Light Journal* thinks the new light will not be a success. It is not sufficiently simple in its mechanical arrangements to be manageable by servants and children. The expense of introducing it will be great; inasmuch as it requires *two* pipes,—one for the oxygen and another for the hydrogen or coal gas. The pressure required being five or six times greater than in the ordinary street mains, a supplementary gas-holder would be required to each building. The high pressure would involve great loss by leakage. This leakage would involve a liability to explosion, caused by gas escaping into basements and rooms not well ventilated. The increase of oxygen in an apartment to the amount of one-tenth the total volume, would cause a spark to burst into flame. A cigar stump not extinguished, for instance, might cause a conflagration.

Again:—The light is *harsh*, not *mellow*. It must be toned down by means of semi-transparent media as, for instance, ground glass. This reduces its photometric power; and a test of its value as compared with other lights should be made upon it in this condition. The jets of gas require such delicate proportionate adjustment that the light is sometimes intractable, and will suddenly go out even in the hands of an expert.

Still another Atlantic Cable is talked of to connect this continent with the town of Milford in Wales.

Familiar Science.

Shoddy in Glass.

There is "shoddy" in glass as well as in woolen fabrics. Consumers of kerosene are oftentimes almost discouraged at the freqnent breakage of lamp chimneys, without any apparent canse. Cheapness being the order of the day, many manufactnrers make chimneys from a silicate of lime instead of a silicate of lead; simply because such glass is very much cheaper than the genuine article. Moreover, it is much more liable to hreak—thus adding both to the profit and the business of the mannfactnrer. The initiated can readily tell the different kinds of glass either by ringing or weighing them. The vibrations of the lead glass have a clear, ringing, bell-like sound, possessing the requisite strength and elasticity to withstand expansion and contraction, as well as the general pressure of use. Chimneys made of such glass will ontlast half a dozen of the silicate of lime or lime-glass chimneys. A few cents extra invested in a lead-glass chimney is money well spent, to say nothing of the saving in wear and tear of temper. It may injure the "trade" in the "shoddy" estimation, as it should do.

Lime-glass costs, in the pot, only about tbree cents per pound, while good lead-glass costs about ten cents. There are about four chimneys to the pound, so that the margin for gain in "shoddy" is quite large. Glass for chimneys should contaiu from thirty to thirty-five per cent. of lead; the best cut glass contains about fifty per cent. An excess of lead is employed in glass which is to he "cnt," so that it may yield more readily to the cutting wheel.

There is a new glass now heing introdnced into the market which does not contain any lead; but which is about midway in value and wearing qualities between lime and lead glass. The improvement is in the mixing. It was first discovered by a Pennsylvania glass-maker, who kept his secret as long as he could; but the prying eyes of the chemist have finally detected it, and the "new glass" is now made at most of the manufactories in the Atlantic States.

Night Air—Erroneous Impressions.—An extraordinary fallacy is the dread of night air which troubles so many people. What air can we breathe at night hut night air? The choice is between ipnre nigbt air from without and foul air from within. Most people prefer the latter. An unaccountahle choice. What will they say if it is proved to be trne that fnlly one-half of all the disease we suffer from is occasioned by people sleeping with their windows shnt? An open window, most nights in the year, can never hurt any one. In great cities, night air is often the purest and best to he had in the twenty-fonr honrs. I could better understand shuttiug the windows in town during the day than during the night, for the sake of the sick. The absence of smoke, the quiet, all tend to make night the best time for airing the patient.

One of our highest medical anthorities on consumption and climate, has told me that the air in London is never so good as after ten o'clock at night. Always air yonr room, then, from the outside air, if possible. Windows are made to open, doors are made to shnt—a truth which seems extremely difficult of apprehension. Every room must be aired from without—every passage from within. But the fewer passages there are in a hospitals, the hetter.—*Florence Nightingale.*

To Ontain Pure Copper in Powder.—Add to a satnrated solntion of sulphate of copper, an eqnal volume of hydrochlorio acid, and insert in the mixturc, several thiu strips of zinc; hydrogen gas is evolved, and a porons copper remains, which when washed and dried is pure metallic oopper, free from oxide. This is a portion of the method preferably adopted in the assay of copper ores. Copper in powder may also be ohtained by transmitting a stream of coal gas throngh a mass of hlack oxide of copper when heated in a flask. This may he done by means of two tubes perforating the cork.

How Broken Bones Heal.

An eminent physician writes as follows in the *Hearth and Home:* Broken bones heal like wonnds of the flesh, hut very slowly; the former require months where the latter require days. The first effort of nature is to clear away the rubbish, or injnred tissne, the same as the mason would remove the *debris* of a hroken wall before attempting to repair the breach. This preliminary work requires five or six days, or even more time, if the injury is severe. During that period the surgeon can do nothing bnt look on with folded hands. The limb in the mean time, should be placed in an easy position, kept perfectly quiet, and cooling applications made to prevent undue inflammation. All efforts to set the bone, during that period, are not only useless, but frequently very injurious. Still greater violence is done to the fractured bone by such efforts, and the dressings necessary to retain the bones in apposition. At the end of about a week the inflammation has somewhat subsided, the limb can be handled without great pain, and the work of repair is now to commence. At this time the hones are to be gently put in their proper relations, and proper retaining dressings applied. This is the true setting of the bones, and can be accomplished without pain or inconvenience, by a skillful surgeon. From this time, all that is required to perfect the cure is to maintain the bones in a state of perfect rest. When a bone is hroken there is no need of haste and impatience. Simply place tbe limb on a pillow, in an easy position, and apply clotbs wet with cold water, arnica, or any form of diluted spirits, and you will have done about all that the best surgeon can do for a week at least.

The Manufacture of Corn Starch.—Methods for the preparation of this popular food vary somewhat with manufactnrers, hut the following method is perhaps as good as any. By this method tbe grain is first steeped either in alkaline water, or in water only, until the grain is thoronghly soaked. It is then reduced to pulp by the use of rollers, or suitahle machinery. It is next passed over a sieve through which the finer portions are forced by revolving brushes, while the coarser parts remaining are to be regronnd. The husk or bran is now separated, and may be used as food for cattle. A stream of water runs constantly down upon the sieve and carries the portion passing through, over an inclined plane or "run." The plane is divided into sections by wooden cleats which are laid across it. These cleats or dams intercept the starch which settles to the bottom, from which it is removed at proper intervals. The greater part of the glutinous and fibrous portions are carried along by the current, and are thus separated from the starch. The starch can be still further purified from the glutinous and fibrous matters by treating it with an alkaline solntion which dissolves the gluten, running through finer sieves, and rewashing it on the inclined plane.

A Cure for Low Spirits.—Exercise for the body, occupation for the mind, are the grand constituents of health and happiness. Motion is a great preserving principle of nature, to which even inanimate things are subject; for the winds, waves, and the earth itself, are restless; and the waving of trees, shrubs and flowers is known to be an essential part of their economy. A fixed rule of taking several hours' exercise every day, if possible, in the open air, if not, under cover, will be almost certain to secure one exemption from disease, as well as from attacks of low spirits, *ennui.* Low spirits cannot exist in an atmosphere of bodily and mental activity.

How to Treat Sun-Stroke.—Strip off the clothing from the head, neok, and chest, and spray the patient on these parts of the body gently, but thoroughly, with cold water; at the same time place the feet in water as bot as it can be borne. Meanwhile, let a strong healthy person rnb gently the legs, and back, and abdomen, having the hands kept cool by occasionally moistening them in cold water. Let the patieut when he is able, drink a little cold water, and after he is able to sit up, have his head packed in oloths kept constantly cool by wetting them in water. As soon as practicable, move the bowels with tepid injections of water. In almost all cases of sun-stroke, the bowels are obstructed with offensive matter whicb must he removed. This treatment can he effectually administered hy any skillful, sympathetic person, who knows when to stop.—*Herald of Health.*

Hard Times vs. Mining.

[Written for the Mining and Scientific Press.]

Messrs. Editors.—On every side we hear the cry of hard times, bnt if we look sqnarely at the condition of affairs, we cannot figure any other result from such causes.

The very pursnit which has previously insured a certain revenue to the public for business pnrposes, is becoming more and more discarded, and for what? Nothing, I answer, which equalizes the loss from this source. To read the daily journals on "onr industrial resources," one would suppose we were a great mannfactnring and producing people. What do we raise or mannfactnre that amonnts to any moment when taken in connection with onr imports for which onr gold must pay the deficiency? Even what we do do is done by a class of people who are small consumers and clanish hoarders,—what is paid to them is of but little public benefit. With all our puffed-up ideas of the "great metropolis" and "great California," we have imported thirty millions to about eight millions of exports, *outside of gold*—in the past six months—to July 1st. Is this kind of business to huild us up, without mining, which has yielded ahout fifty millions per annum? Mining is all that has saved the country. Can our bankers and business men afford to decry it? Are they not cutting off their own resources by so doing? It seems to me so.

The fact is, mining *must* be encouraged and supported, or we are a bankrupt people, at all events until we can reverse the import and export figures.

If it has proved detrimental to many, correct the troubles, which will prove to be more in a lack of attention to *legitimate* mining, and more attention to reckless speculation.

The question, as I look npon it, viewing "hard times" from the little end of the horn, is clearly presented by figures that we have got to *mind*, or "bust." '49.

Notes of Travel.

We 'condense the following from some "Notes of Travel" furnished us by an attentive correspondent:

Suisun.—We have met and enjoyed the hospitality of our friend Mr. Oliver Denny. Mr. D. is an artist of no inconsiderable merit, and the "special" of the California Pacific Railroad Company, along the line of which he has taken a large number of veiws, several of which are forwarded herewith. The business prospects of Suisun are rapidly improving.

Grain Yield.—The crops along the line of the railroad in Solano county, and the southern part of Yolo, through which it passes, are turning out even better than expected. The day I passed over the road there were 6,000 tons of grain at Dixon's Station, 6,000 at Dakes', and at intermediate points, including Davisville, the estimate was 13,000 tons—making the total amount sacked and lying along the road ready for transportation, not less than 25,000 tons, and the farmers are still in the midst of their harvest, with thousands of tons yet to be cleaned and sacked. The farmers all through this section appear to be jubilant over their prospects.

Sacramento and its Female Seminary. We were bere welcomed to all the comforts of a palace home by that worthy gentleman, Prof. Herman Perry, principal of the Sacramento Female Seminary. This institution, which was established in 1863, has met with a most remarkable degree of prosperity. It is under the direct management of Prof. Perry and his estimable lady, who are aided by a competent corps of assistants. The building is an elegant brick edifice, three stories high, exclusive of basement. The grounds are ample, tastefully laid out, and adorned with a profusion of flowers and shrubbery.

Bnsiness of all kinds is quite brisk here, more so in fact than any place I have visited. The foundries and machine shops are all running full-handed; shipping merchants look gay and happy, and every department of industry is looking up. The various transportation lines are coming and going full to overflow. L. D. C.

Strength of the Spider's Web.—A bar of irou one inch in diameter will support a weight of twenty-eight tons; a bar of spider's silk of the same diameter would snpport a weight of seventy-four tons.

California Academy of Sciences.

At the regnlar meeting of the Society on Monday evening, Aug. 3d, seventeen members were present—Dr. Blake in the chair. Mr. Gale presented a specimen of the star fish to compare with another specimen which had been injured. The same gentleman also presented several specimens of fossil shells from Treasure Hill, White Pine.

Mr. Mnrray, of Hnmboldt Connty, presented an Indian instrument made of serpentine, taken from a gravel bed in Klamath Connty; also several stone relics found on the coast in Klamath County.

Dr. Gibbons presented some apples from Alameda Connty, of the growth of 1868, which had lain ont doors exposed to the weather beneath the oak trees since last November, a period of nine months, perfectly preserved. Specimen sheets of Mr. Elliot's work on Birds of North America, not hitherto described, one hundred and seventeen in number, were presented to the Academy. A general discussion followed, during which a member stated that the stone implements found in the mounds and old burial places of the Indians furnished no evidence of great antiquity, either of themselves or the persons who had fashioned them, as the same character of implements were in use at this day among the tribes of Indians who inhabit the country ahout Pnget Sound and east of the Sierra Nevada. Dr. Gibbons stated, as an evidence that the monnd builders had no knowledge of metallurgy or the combination of metals, there never yet had been taken from the mounds of North America an implement of any kind composed of any material except iron or stone. He said there had been found in some of the mounds of the Soutbern Pacific coast, articles of jewelry composed of virgin copper, covered with thin sheets of silver, but no specimens of bronze or other combination. The Chairman announced that the Society was now out of debt for the first time since its organization, and that they would now be enabled to reorganize, and improve their mnseum. After some further discnssion, the Society adjourned.

New Method of Refining Vegetable Oils.—"Mr. C. Michaud, of Honfleur, has discovered a new method of refining oil which will probably eclipse all those in general use at the present day. This method has just been communicated by M. Chevallier to the *Societe d' Encouragement.*

While sulphuric acid is introduced into the oil in minute nnmerous streamlets, air is blown into the oil so as to produce a great commotion in the liquid and to fill it with air bubbles. The mucilage contained in the crnde oil being acted on by the acid, soon forms with the air a voluminons layer of scum at the surface, whicb is skimmed off as it forms. This insufflation of air is repeated several times in succession, and the scums cleared off every time until the oil is clarified.

At this point of the operation it still retains free sulphnric acid. It is now run into a copper vessel, and steam is forced through it until the oil has reached a temperature of 100° Cent. The steam is then allowed to bubble through for half an hour or an honr longer. After the oil has cooled down some 20° or 30° Cent., which may be done artificially, it is run through an ordinary filter.

The oil obtained by this process surpasses in quality and in limpidity any that has been made to this day, and the operation combines the great advantages of speed and economy. Two large refineries have lately been pnt up on the Michand plan, and the oil produced by them is so pure that the wick of a lamp burning it will not carbonize after many days' nsage." *Scientific American.*

The Wire Tramway.—We have already noticed the method of transportation recently adopted for conveying stone from the Leicestershire (Eng.) stone qnarries to the railway statiou three miles distant. Boxes which will carry one cwt. of stone are hung at intervals on an endless wire rope, which is moved by steam at the rate of six miles an hour. The frame of the box is so curved that while its equilibrium is preserved, it passes through the supports without difficulty. It is said that the success of the plan is so complete that some of the leading engineers are discnssing the possibility of constructing a tramway of this kind between Dover and Calais, which should be supported from a line of pillars in the channel, and along which passengers could he carried.

Mechanical Progress.

Improvement in Rolling Iron.—An English roll turner has invented new rolls, which,—says the *Coal and Iron Review*,—possess many advantages over those heretofore in use. They are made in tubular form instead of, as now, solid; and a stream of water which is made to pass through them, prevents too great expansion from the heat and saves the "drag" upon the engine, which is so great under the ordinary plan, that the journals suffer wear to an alarming extent. With these rolls it is no longer necessary to apply water upon the outside during the operation of rolling. Not only therefore is the steam which has been a hindrance to the workmen entirely avoided, but the scales which stuck to the rolls, also; consequently the rolled iron is left with a smoother surface.

Shifting the Adjustable-gauge Cars. We have noted the fact that freight cars loaded with wheat were run over the whole distance between Chicago and Boston, their gauge being shifted to conform to that of the rails on the different roads. This shifting is done at Point St. Charles,—and in this wise: A pit, about four feet deep, has been excavated between the rails, in which the workmen, with hammer and wrench, takes his position. The track at the western end of the building is of the broad gauge, but gradually diminishes to the narrow gauge at the eastern entrance. Each wheel on the right side of the car, instead of being immovably fixed on the axle, by the unscrewing of a nut and loosening of a bolt, may be moved in upon the axle. It is but the work of a moment for the mechanic in the pit beneath the car to unscrew the nuts, and then the train, being slowly backed by the engine, the right hand wheels of each car are gradually crowded in by converging rails till they are brought to the narrow gauge. A few turns of the wrench and the wheel is firmly fastened and the car ready to move on to Boston. In changing from the narrow to the broad gauge a third rail crowds the wheel outward to the desired width.

Steam Lead a Fallacy.—F. W. Bacon writes the *Scientific American* upon this subject. He says that a properly-constructed engine does not require it, and that it causes great waste of fuel. The object is to arrest the momentum of the reciprocating parts of the engine, and prevent shocks when their motion is reversed. He says: "We substitute a cushion by closing the exhaust sufficiently early to fill the passage ways and clearance with the exhaust steam, by compressing it to, or nearly to, the initial pressure in the cylinder at the commencement of the return stroke. By this cushioning we gradually arrest the momentum of the reciprocating parts and store it for the return stroke. We do more: we fill the space between the closed steam valve and the piston with the exhaust steam, and consequently do not have to call on the boiler for it. We do more still: the piston, instead of meeting near the termination of the stroke a force equal to the initial pressure, *plus* its momentum, suddenly, like the impact of a battering ram, meets the thin vapor and compresses it gradually without a shock; thereby saving oil, heating, pounding, wearing of brasses, breaking of cranks, connections, and all their concomitant evils."

Rivets.—"The holes should never have sharp edges, and the head of a rivet ought to be connected with the shaft by a conical part. Whenever this part is omitted, and when, consequently, the rivets have sharp corners below their heads and the rivet-holes sharp edges, the rivets break close to the head, when subjected to a strain of tension and when the heads are strong enough not to be stripped off. When, on the contrary, the rivets have a conical connecting part between their heads and shafts, they extend considerably before they break, and the rupture finally occurs in the middle of the shafts. All experiments have given this result without exception."—*M. Balcke—Van Nostrand.*

The Siemens-Martin Process.—This process for steel-making has been abandoned—at least for the present. A correspondent of *The Engineer*, however, says that it is not, as yet, finally and definitely given up.

Coating Iron with Brass.—A new process has been patented in England, for coating iron with copper, brass, or silver, which *The Engineer* says bids fair to create a revolution in some of the trades. "Vencering" and electro-plating are both open to objection. "What has long been wanted is a method of coating iron with brass or silver, as readily as it is now coated with tin, and so as to render it equally durable. This has been at length successfully accomplished by a Wolverhampton patentee with remarkable success. The process adopted is that of immersion, but the details of the invention are for the present kept secret. I have seen, says the correspondent of *The Engineer*, some sheets of iron which have been coated with copper on this principle, quite equal, for all practical purposes, to sheets of copper. They will bear stamping into all imaginable shapes, and even burnishing, without removing the copper coat, the latter having to all appearance eaten its way into the inferior metal. Coated iron on this principle will supersede brass and copper to an enormous extent, for while it will be equally serviceable, it will be 40 per cent. lower in price."

Cutting Glass with Steel.—The *Scientific American* describes and illustrates a recently patented instrument for cutting glass, in which a hard steel cylindrical point does the duty of the ordinary diamond, and with, it is said, even greater rapidity. The cutting edge is the terminal edge of the small cylinder or point. This is made to *rotate* upon the glass, and rests upon two small disks, which serve as friction wheels; its other end having a pointed bearing which runs in an adjustable center. The instrument is held upon the glass at the angle of 45°, and is drawn towards the operator. For cutting circular plates, as for instance clock glasses, it is said to be superior to the diamond.

High and Low Steam Economy.—The following are the conclusions reached in two recent articles upon this subject in the *American Artisan:*

In a high-pressure engine, without expansion or condensation, theoretically 6·37 *per cent. of the heat from the fuel is utilized and* 93·63 *wasted; and in practice only* 5·10 *per cent.* is utilized, while 94.90 is wasted.

In a low-pressure condensing engine 7·02 *per cent. of the heat is utilized theoretically, and* 92·98 *is wasted.* In practice 5·27 per cent. is utilized, and 94.73 wasted.

In a high-pressure expansion engine without condensation 10·4 per cent. of the fuel is utilized, *and* 89·6 *is wasted*, theoretically; and 7·8 per cent. is utilized in ordinary practice.

In an expansion and condensing one-cylinder engine 15·9 *per cent. of the heat is utilized, and* 84·1 *per cent. theoretically wasted;* and practically in our best engines 11·92 only is utilized, and 88·08 is wasted.

Equivalent Horse-powers in Different Countries.—In the United States, as in England, we have 33,000 units per minute, the unit being the foot-pound. This corresponds with 550 units per second. In France, it is 75 units per second, the unit being the kilogrammeter (one kilogram one meter high). In Prussia, by reason of recent experiments, a unit has been adopted of 480 units per second for Prussian feet and pounds, or 28,800 per minute. In Austria, it has been settled that, in the future, 430 foot-pounds must be accepted as a horse-power. Besides this, Prussia has adopted a railroad standard—namely, a load of 250 centners, German weight, moved on a horizontal track with a velocity of one mile per hour, or 65 centners four miles per hour.—*Eng. and Min. Journal.*

New Blast Engine.—The *American Exchange and Review* thus describes a blast-furnace engine recently built at Norwalk, Conn.: "It is a vertical engine. The air-cylinder is 72 in. diameter and 8-feet stroke; the steam cylinder 36 in. diameter. The air piston and follower instead of being cast iron and having packing between, consist of a ring six inches in thickness, with space for packing, which will be of solid wood felted and set out by a spring ring. Instead of the one piston-rod taking the piston in the center, there will be three taking hold of the outside of the air piston, passing up through the head *outside of the steam cylinder*, and fastened to the crosshead."

Cleaning Water Gauges.—The glass tubes of water-gauges should be cleaned with acids or alkalies,—and not by friction, even with a soft substance. The least scratch on the inner surface causes it to crack.

Scientific Progress.

The Faraday Lectures.

On June 17th the inaugural address which commenced the Faraday lectures was delivered at the Royal Institution by M. Dumas, the Faraday of France. Prof. Williamson, F. R. S., occupied the chair, and after explaining the nature and object of the lectures, presented M. Dumas, on behalf of the Chemical Society, with a large gold medal, which he stated had been specially struck in commemoration of the visit of that gentleman to England.

The address of M. Dumas, which followed, is reported as having been eloquent and brilliant. The subject was "The Progress of Discovery in Chemical Science." In the course of the address, he referred to the researches of Dr. Dalton and Dr. Prout, and to the views entertained as to the atomic numbers being exact multiples of a standard number, urging that all elements were but varied combinations of some primary element with which as yet we are unacquainted. The remarkable nature of the progression of the numbers representing the atomic weights of elements of the same class was, he was convinced, not the result of mere accident. There was lithium, with its number 7; sodium, 23; and potassium, 39—each progressing by the number 16. Then, again, there was magnesium, 12; calcium, 20; and iron, 28—each progressing by the number 8, or the half of 16, which was certainly a most remarkable fact, and tended, in connection with our other knowledge, to show how much we have still to learn.

The immense field for investigation in the study of the effects of light and heat upon organisms, with the cause of those effects, was duly pointed out.

At the conclusion of the address, Prof. Tyndall, who was an old student of M. Dumas, moved the cordial vote of thanks of the Chemical Society to him; and remarked that his vigor and eloquence now surpassed the same of twenty-five years ago.

Prof. Wurtz on "Hydrogenium."

In a recent number of the *Gas-Light Journal*, Prof. Wurtz, after describing some experiments by which Favre believes himself to have confirmed the conclusions of Prof. Graham in regard to the metallic nature of hydrogen, makes the following remarks: "Though the possibility, even the probability, of a *metalloid* form of hydrogen (as there is one of carbon) is undeniable, yet this ancient theory of the metallic nature of hydrogen appears to me, notwithstanding Graham's brilliant discoveries, to rest as yet rather upon poetical than inductive ground. At least it may be distinctly asserted that there is nearly as much evidence that both oxygen and nitrogen are also metals. Fused silver absorbs oxygen, without change of metallic characters, and the "ammonium-amalgam" contains nitrogen as well as hydrogen. Many of the metallic oxides are metalloid in aspect, magnetic, electric conductors, etc.; and nitrogen forms metalloid nitrurets. The elements of the nitrogen group are metallic, except phosphorus, which is asserted to have been obtained also in a metalloid form. * * * An inductive view of all the facts seems to tend towards the conclusion that, both in this and in the corresponding carbonic oxide compound, the palladium is in a state analogous to that of gold or silver penetrated by liquid quicksilver, pointing to a liquid condition of the condensed gas. * * * I would ask what case is known of an alloy of solid metals formed by voltaic precipitation of one on the other? Amalgams, however, are readily thus formed, even of metals hard to amalgamate otherwise. Above all I would ask, is it conceivable that any alloy of solid metals once formed, could ever be *decomposed* throughout its mass, like the palladium compound, by being made the positive electrode in an electrolyte? It is, however, not at all inconceivable that an amalgam might thus behave. Against this may be argued the general destruction of tenacity by mercury; but this is far from invariable, as several metals (among them lead) can be combined with considerable mercury without destruction of malleability or tenacity.

I have hinted above at the possibility of a special metalloid form of hydrogen. In fact, Graham concludes that the hydrogen in the palladium compound is in the *active* form, corresponding to active oxygen (ozone. *Is ozone then metalloid?)* Does it not follow that if this active hydrogen is metallic, ordinary hydrogen is not so? Finally, I would inquire whether it has heretofore been taken into this consideration, what we are to make of the combinations of *carbonic oxide* with palladium and iron. Are we to create another hypothetical *compound* metal, *carbonylium*, and is steel possibly an alloy of carbonylium? Further speculation in this direction, however, we shall for the present hand over to the next lunatic asylum, and wait until some master-hand, by crucial experiment shall rend the veil, and let light into the labyrinth in which we now so blindly grope.

Ancient Human Remains.—It is said that the French government has sent a paleontologist to examine and report upon some human skeletons recently exhumed in the Department de la Dordogne. He reports that there are five; and that they must have belonged to a gigantic race, whose limbs resembled those of the gorilla. The skulls, however, are of remarkable size. They are in the hands of the scientists for careful examination.

Since the above was in type we have seen *Silliman's Journal* for July, in which we find a notice of *Reliquiæ Aquitanicæ*, containing an account of the researches of M. Lartet. We condense a few paragraphs from the remarks of the editor, Professor Jones: "No discovery could be of greater interest to Anthropologists than that of these bones. The objects found in the Caves of Périgord not only furnished us with the most satisfactory proofs of the contemporaneity of Man and the Mammoth, but they revealed the most curious details of the life and manners of the old Cave-dwellers of Périgord; still we were without any knowledge of the anatomical characters of this intelligent and artistic race, whose clever carvings are objects of our astonishment.

"The excavations lately made near Les Eyzies, by M. Louis Lartet, enable us to supply this want; and there cannot be any doubt of the authenticity and high antiquity of the human bones there exhumed."

Silver Stains Removed.—Everybody knows how persistent is the black stain of nitrate of silver. Cyanide of potassium, in solution, is often used to remove these stains; but there are objections to it. Grimm says the stains can be bleached by chloride of copper, and then washed out with solution of hypo-sulphite of soda and afterwards with water. For white stuff, a weak, freshly-prepared mixture of permanganate of potash and hydrochloric acid is used instead of the chloride of copper.

Leaves and Carbonic Acid.—Boussingault demonstrated the fact that carbonic acid is decomposed and oxygen produced, by the leaves of plants, in the following manner: He introduced a stick of phosphorus into a mixture of carbonic acid gas and hydrogen. No oxygen being present, the phosphorus did not undergo combustion; that fact being proved by the absence of vapors. But a green leaf then introduced, immediately caused the vapors to rise; showing that combustion was going on, and therefore oxygen had been produced by the decomposition of the carbonic acid.

Test for Blood.—The London *Lancet* says that Prof. Bloxam of King's College has found that a mixture of tincture of guaiacum and ozonized ether (that is to say, a solution of peroxide of hydrogen in ether) instantly produces with blood or blood-stains a beautiful blue tint. Prof. Bloxam mentioned that he had extracted a single linen fiber in the case of a blood-stain twenty years old, and with an almost inappreciable amount of stain on it; and had found the characteristic blue color was immediately induced by the test, and readily detected by microscopical examination.

Farming and Gardening.

The Silk Business.

Notwithstanding several mishaps to the worms in various portions of the State, where large losses have occurred, through inexperience or negligence, silk-growers are not at all discouraged or any the less hopeful for the future. Such mishaps must necessarily he expected in all new undertakings. The severe loss experienced by Mr. Haynie, whose worms were destroyed hy the fumes of pyroligneous acid, will not he likely to he again encountered hy him or any other grower who has heard of his accidental loss. All will profit hy his experience. Some losses have heen met with hy allowing too great a variation in temperature. In some instances it has heen allowed to fall too low; in others, through lack of ventiletion, it has been suffered to reach too high a degree. In the cocooneries of France and Italy, the temperature is very carefully watched while the worms are feeding, and kept within a range of from 66° to 80° Fahrenheit. One great difficulty is the unfitness of the huildings which have been used for cocooneries. To meet with success, on any very lerge ecale, huildinge ehould be put up with especial reference to the husinees. Where temporary and unsuitable structurcs are employed, accidents must be expected. Experimenters appear to be aware of this fact, and are in no way discouraged at unfavorahle results, in eo me instances.

Experience is also needed as to the proper time for hatching. This process must be euited to the climate of every given locality. Experience in Nevada county, where the summer is extremely hot, shows that July, or even the lest of June, is too lete. The experience gained in this particular during the past and previous year, will be carefully treasured np. In a country like Celifornia, where the climate is so varied, each locelity muet have its own times and seesons. Experience is the best teecher, and small experiments entail less loss and less liability to discouregement than larger ones. Amateur sericulturists will do well to keep careful records and compere notes.

Messrs. Michel and Loutzenheizer, of Grass Valley, and Mr. Muller, of Nevade City, have heen experimenting lergely the past season in Nevada county. The latter has had the largest experience, and, in conseqnence, appears to have met with the most complete succese and less loss. Mr. Loutzenheieer, especially, is not a man to give up an experiment becanse of partial failure. He has too long heen accustomed to making things snceeed, to ellow any failure in this, his latest undertaking.

It mey be interesting to eome of onr readers to know that the eilkworm *can* live on something else than *morus multicaulis*. A lady in Uteh Territory, the past season, fed 2,000 worms on Osage orange leaves for two weeks after hatching. Not one wae lost. The worm is also fed upon the ailanthns.

It is said that there is a Japanese worm, the Bombyx Yamamai, which ie carefully guarded and allowed to epin only for the Tycoon and his household, which feeds on oak leaves, and producee a very superior silk. A Frenchman hae recently eucceeded in smuggling away a few of the eggs of this species to the French garden of Acclimation, in Paris, from wheuce it is being distributed throughout Europe, where it is considered a "great thing." The silk made hy this worm, and fed upon the oak, is said to be much finer than those obtained from any other source. If these facts have anything of value in them, we presume our California sericulturists will not lose any unnecessary time in finding it out and profiting therefrom.

Hints to Hay Makers.

At a lete meeting of the Farmers, Club of the American Institute, Mr. Todd read a paper on hay-meking, from which the following excellent hints are extracted: "If we spread a small quantity of green grass on a floor heneath a roof that will protect it from rain and dew, the moisture will disappear in a few days, and the leaves and stems will be as sweet as grass to the taste of the animal, and it will emit an agreeable fregrance, and no smell of must or dust will be perceived when the hay is moved. These facts furnish an important clue to the process of making hay. There is quite as much danger of injuring the quality of hay by allowing the gress to be cured too much in the hurning sun as there is of haking breed or pies or cakes too much. If grass be allowed to lie for hours, and in meny instances for two or three days, exposed to the hot snn, the hay will appear quite as unpeletable to domestic animels as scorched and dried-np hread does to us. The substances in the newly-mown grass are in a semi fluid and plastio condition. The object in making hay is to dry these substances just enough to prevent their spoiling in the mow, and at the same time retain a kind of elasticity. When the stems and leaves of grass will break and crumhle to atoms, the evidence is conclusive that the hey has been eunned too much. When grass is epread out in the burning sun, es soon as the steme and leaves on the surface have become wilted, the tedder and the forks should be put in motion, and the newly mown hay ehould be tossed ebout continually until every leaf is fit to be raked. By etirring, and turniug, and tedding, other stems and leeves are brought to the surface, where they receive the benefit of the heat of the sun. Besides this, grase will cure in the air much sooner than when lying on the ground. When we gather mint, sage, end elderberries, why are we alweys so careful, in drying such things, to avoid any epontaneous heet, simply because spontaneous heat, efter the moisture hes been expelled, will leave a musty taste and mouldy appearance?"

The Canada Thistle in Oregon.—The Willamette *Farmer* says that the Canada thistle is now growiug upon the premises of Mr. Shindler, in Portland, hy whom its character was not known, but who, ever since his attention wes called to it, has taken pains to eradicate it. At first but one specimen was noticed, which was carefully gruhbed up by the roots; but the next year it still coutinued to spread, and has spread still further the present, which is the third year. Efforts are etill heing made to eradicate the pest, hut as yet with very little success, althongh it has never yet gone to eeed. The *Farmer* thinks the city or county authorities should take it in hand, and cerefully guerd ageinst its epreading. This is one of the most pestiferous and tenacious of known seeds, and if it once gets a foot-hold in Oregon, will spreed throughout the coast, and will work irreparahle damege in our fields. The seed from which this specimen sprung is eupposed to have been brought there in a hox of furniture from the East.

Large Yield.—The Missouri papers are hoasting that a "single stool" of wheat was grown on the farm of J. J. Monaghan, near Sedalia, Pettis county, Missouri, which perfected sixteen heads of wheat, containing 838 kernels. That would he called poor doings to hrag over among farmers on the Pacific Coast. The Oregon *Farmer*, of July 19th, speaks of a single grain of wheat in Boise Valley, Idaho, which produced one hundred and twenty stalks, averaging thirty grains each—making a total of 3,600 kernels. Will our Missouri friends please try again?

Death of the Inventor of the Mowing Machine.—The Rev. Patrick Bell, D. D., of Scotland, who died in April last, was the first to invent a mowing mechiue, with vibrating cutter-bars. His invention was made in 1827, and it is from various modifications and improvements upon this machine, that the celebrated American mowers have been founded.

The Potato Hobby.

Tilton's Journal of Horticulture, in noticing the new-fledged hobhy of seedling potatoes, says: "We have heen gradually approaching the crisis for the past dozen years; in fect, the disease had its origin in the Rohan, in the infant days of other agricultural and horticultural hnmhugs; and it now gives promise of being the richest placer in the whole list. Brohdignag strawberries, clusters of grapes more magnificent than those from the Valley of Eshcol, and other like wonders, have become stale beside the new potatoes.

The Rohan sold at fifty cents a tuber; but now we go three dollars a pound, or a hundred and eighty dollers a bushel, and scarce at that; "demand heyond the supply." This is decidedly aheed of a hundred guineas for a tnlip, of which only a half dozen could be produced in a season, or five dollars for a plant of the celestial *Morus multicaulis*. The Early Rose (no rose can possibly he so good under any other neme) has gone down to the low price of three pounds for two dollars, and is evidently so disgusted therewith, thet it has gone back on its originetors full two weeks on its advertised time of meturity. We cannot, therefore, cap the "climax" short of three dollars a pound."

A Boston paper gives the following information, which, if put into practice, would greatly reduce the eales of fancy varieties of potatoes at exorbitent pricee:

In the letter part of February a gentlemen named Tailby purchased two potatoes at $50 each. They were cut in pieces eech with en eye, and exposed a day or two to dry, and then put in boxes of earth and placed under a glass. One of the potatoes had ten eyes, the other had thirteen, but two of these were bad, so but twenty-one sprouted. In about three weeks the sprouts were two inches high, when they were cut off and placed in small pots, and rooted, and in two weeks more these sprouts were cut in the same manner, and another crop secured from the originel stock; and this practice hes been pursued until Tailby has grown 3,000 plents from those two potatoes, and he hee over a hushel of small potatoes, some of them larger than hens' eggs. Some of the cuttings were grafted into old potatoes, from which all the eyee had been removed, which brought them on a great deel sooner.

Agricultural Items in Brief.

Something for California Farmers to Think of.—Oregon oets have been from five to fifteen cents higher per cental at San Francisco all throngh the season then California. Oregon sent to Celifornia during the year ending June 30, 1867, 122,889 centals of oats, againet 16,325 centale for the like period ending June 30, 1868.

Mowing Machines.—No less than twenty-seven mowing machines were entered for competition at the New England Agricultural Fair in June last.

A Working Sheep.—A eheep in Washington county, Ohio, has, during the past year, churned $200 worth of butter, raised a lamh, and fleece shorn of $3.15 of wool. A profitable sheep. So says an Eastern exchange.

Value of Manure.—A successful deiryman and farmer in Connecticut reckons his stable manure as worth $26 a year for eech animal.

Hay Yield.—The average yield of hey per acre in the State of Messachusetts in 1866 was 1.37 tons. This is a better average than in any other New England State.

A Good Word for Snakes.—The Contra Costa *Gazette*, after noting the value of spiders and toads as destroyers of insects, hurtful to garden crops, has this good word for non-venomous snakes: "A physician of our place, whose country practice makes him a constant traveler of the county roads, has recently euggested to us the propriety of a cantion against the system of destruction which is indulged in towards the common, harmless snakes, scores of which may be seen in a day's ride over any of our highways, victims of the unreasoning animosity cherished and indulged towards the whole species by the descendants of Eve. These snakes, while they may occasionally pilfer a few hens eggs or young chickens, more than atone for such slight mischief by their efficient service to the farmer in destroying field mice, young rats, gophers, moles and squirrels. We were told recently of an instance where no less than ten young squirrels were taken from the food pouch of one of our common garter or striped snakes after it was killed in the road. A little consideration will be sufficient to satisfy any thinking person that the farmer has every motive for protecting instead of destroying our harmless varieties of snakes."

Roots, etc., vs. Hay.—The equivalent of twelve tons of hay can be raised on one acre of roots. Roots and shorts, mixed with the straw of grain or with hay, will sustain a working horse in hetter flesh then hay.

Ocean Telegraphy.

"The gntta percha covering of the copper wires, under the pressure of a greet depth of water, becomes en absorhent of the electricity scnt through them to the extent of 90 per cent. The first portion of the electric wave of 10 per cent crosses the oceau (1,700 miles) in two seconds, and it would be followed by a succession of waves, from the restoration of that portion of the electricity which has been absorbed hy the gutta-percha in impulses, and the signel would he repeated and produce confusion. To remedy this, Professor Varley introduced a key, which sends alternate currents positive and negative, at such intervals as allow the first wave of 10 per cent. to pass forward, and then that portion absorbed by the covering is neutralized by its opposite, and the cable is cleered for the tranemission of a second pair of currents. The battery is a very emall one (three of Daniell's cups). The instrument consists of a minute polarized needle, suspended on a single strand of a spider's weh, or one from the silkworm. In the middle of this minute needle is placed an elmost microscopic mirror, which reflects a single rey of light from a powerful lamp. The currents of electricity deflect this needle alternately to the right and left, for a space of time corresponding to that occupied in the signel on the lend line, the same kind of alphebet heing used in both cases. The receiver (not operator) sits in a dark room, and the small mirror reflects the ray of light upon a piece of white paper before him, on which a black line is drawn, to the right and left of which the light is alternately reflected. The receiver reads these eignals by "eight," and transmits them to another person, placed outside of the dark room, by means of en ordinary instrument."

The ehove, from W. J. McAlpine, well describes the use of the Thompson galvanometer in ocean telegraphing. By means of this exquisitely delicate little instrnment, every roll of the Great Eastern, during her recent laying of the French Atlantic cable, gave proof to the wetchers at Breet that the ship wes safe, and the connection complete; the elight current produced in the coils by the motion being sufficient to prodnce an infinitesimal deflection of the needle which the glencing point of light would alone suffice to record.

One Form of Coöperation.—Workmen and others in Connecticut are forming clnbe for thc purpose of huying coal by the cergo. They thereby save a couple of dollars, if not more, on the ton.

Foreign Postage Rates.

	Letters, ½ oz.*	Newspaps.
Acapulco (Mexico)	10	2
Algeria, French mail	30	2
Argentine Republic, by packet fm N. Y., 23d of each month (¼ oz., 18c)	25	4
do do via France, Fr. mail from Bordeaux (¼ oz., 15c)	30	6
Aspinwall (or Panama)	10	4
Australia, via Panama	22	6
do by private ship	3	
Austria (See German States below)		
Belgium—Same as German States		
British N. Am. Provinces, within 3,000 miles	6	2
do do do over 3,000 miles	15	2
do do do Dom'ns of Canada	6	2
Central America, Pacific Slope	10	2
China, by steamer from San Francisco	10	2
Chili	34	
Cuba	10	
East Indies, via China	10	
France (¼ oz., 15c.)	30	2
German States and free cities, including Austria, Bavaria, Baden, Bremen, Brunswick, Frankfort, Hamburg, Hanover, Luxemburg, Lubec, Mecklenburg, Oldenburg, Prussia, Saxe-Altenburg, Coburg-Gotha, Meiningen, Weimar, Saxony, and Wurtemburg, by North German Union	10	3
do do by closed mail via England	15	4
Great Britain (Ireland, Scotland and Wales)	12	2
Holland	15	4
Italy, direct closed mail via England	15	4
Italy, via North German Union direct	14	7
Japan, via steamer from San Francisco	10	2
Mexico	10	2
Nicaragua, Pacific Slope of, and Panama	10	2
New Zealand	22	6
Poland	20	
Roman or Papal States, via N. German Union	14	7
Russia	20	5
South American States, Atlantic Coast, via Eng.	34	4
do do Pacific Coast	34	6
Sandwich Islands, by steamer	10	2
Spain, via England (½ oz., 22c)	34	6
Sweden, via North German Union	16	8
do closed mail via England	24	9
Switzerland, direct closed mail via England	15	4
West Indies, Br. & Danish mail, via St. Thomas	10	2
West Indies, North British mail	18	

*Most of these rates require prepayment.

[From the San Francisco Daily Herald, Aug. 6th.]

Mechanics' Institute—Polytechnic Association.

The regular monthly meeting of the Mechanics' Institute was held last evening. The President submitted his quarterly report, representing the affairs of the Institute to be in a very prosperous and flourishing condition. There are now 5611 in the treasury, and many valuable additions to the library have been made. Matters pertaining to the forthcoming Exhibition are very promising; over three-fourths of the space in the Pavilion has already been engaged. Many applications for room to exhibit articles have been received from the East. The Board has decided to use the upper galleries of the Pavilion as bazaars for the sale of articles. This will be an entirely new feature in the Exhibition.

September 14th has been decided upon as the opening day, that being the centenary of Humboldt.

The British Minister has called the attention of the Institute to the fact that the Exhibition to be held in London in 1870, is to be an exhibition of the skill of the mechanic rather than that of the product of the manufacturer, and the President suggested that the mechanics of California contribute some of the mechanism of their skill. After the reading of the President's report, Mr. W. B. Ewer read the following interesting and instructive paper upon explosives:

The sudden and violent expansion of a body, by its component parts acquiring a great increase of bulk, has been termed *explosion*. This result is usually brought about by the application of heat to certain combinations of solids, whereby they are suddenly converted into gaseous forms. One remarkable feature in such explosions is the immense velocity and force with which the gases so produced expand. Another is, the intense degree of heat evolved by the new chemical combinations and reactions which thus take place.

Early Discovery of Gunpowder.

The agents most anciently, and still most commonly, employed in the manufacture of explosives are nitre, sulphur and carbon, which, when properly combined, are known as gunpowder. When these agents were first mixed for explosive purposes is very uncertain. The "devouring fire" and "earth thunder" of the Chinese writers, centuries before the Christian era, undoubtedly referred to such a mixture. Ancient Hindoo, as well as more modern Greek and Roman writers, contain numerous passages which point most unmistakably to the knowledge of such an explosive. Alexander the Great is supposed by many to have found his conquering progress eastward stopped by a nation possessed of the secret art of making gunpowder. We hear of similar demonstrations at the siege of Syracuse, where, we are told, engines were used which threw stones with a great noise. In short, from a great mass of evidence within our reach, the conviction is forced upon us that the manufacture of gunpowder, very nearly as we now have it, has been known to a few among the learned men of all ages.

The reason of its not being more generally known and employed among the ancients may reasonably be attributed to the fact that all kinds of learning, and especially chemical knowledge, were in early times studiously confined to a few, for the reason that by such limitation great distinction and influence was attached to its possession. The magicians of ancient Egypt, who ambiguously essayed to measure their knowledge and power with that of the heaven-inspired prophets of God's chosen people, were of this class.

For many years after the knowledge of this compound had been freely given to the world, its only employment was still in the direction of war. The Venetians were the first to take advantage of its re-discovery; but it was at the famous battle of Cressy that it gained historical position. From that time to the present, hand to hand conflicts, in the manly style of old, have become more and more impracticable, until battles are now universally fought with a *grand flourish*, at respectable distances; and what modern days have most justly ridiculed as "fuss and feathers" have found welcome and most efficient aid in "villainous saltpetre."

Its Introduction Into the Useful Arts.

Considering the wonderful power exhibited, from the first, by this explosive compound, it is a little remarkable that so long a time should have intervened after its *general* introduction into the art of war, before any one suggested the possibility of its employment in the more quiet and useful arts of peace. But so it was—the pick, the lever, the wedge, the hammer, and fire, were still for centuries the only agencies employed for breaking down rocks in the prosecution of the various engineering operations connected with road building and other rock excavating. But in time the happy thought *was* conceived, and successfully carried out, of applying this force as an agency in that direction. Its application was so novel and efficient, that it was not inappropriately suggested as entitled to the distinction of being known as a *new mechanical power*. When, or by whom it was first so employed is not known. The indefatigable newspaper reporter was not then abroad, or the circumstance would undoubtedly have been duly recorded, and handed down to posterity, as one of the most important events in the history of mechanical progress.

Improvements in Its Manufacture.

But little attention appears to have been paid to improvements in the manufacture of gunpowder, until about the commencement of the present century, when numerous experiments were undertaken to more perfectly adapt it, by various modifications in its manufacture, to the diverse uses to which it was now being applied; and also to add to the intensity of its explosive power. It was during these researches, and at a time when chemical science had begun to make rapid advancement, that the various *fulminates* were discovered, consisting of the salts of fulminic acid combined with certain bases, as of gold, platinum, mercury, silver, etc., all of which possess, in a greater or less degree, violent detonating properties. Chlorate of potash was also, about this time, proposed as a means of increasing the explosive powers of gunpowder; and numerous mixtures and modifications of this violent explosive have from time to time, until the present day, been presented with special claims to superiority.

But all such mixtures appear to exhibit important and radical defects. It seems that the violently explosive nature of the chlorates cannot be sufficiently toned down to render them safe for handling, or at all applicable to gunnery.

Paper powder is, perhaps, about the safest application of chlorate to blasting purposes which has yet been proposed. But the conditions of even this manufacture are such that it cannot be produced with a sufficient degree of uniformity to be made reliable for general use.

Horseley and Ecnhardt have each introduced chlorate compounds, in which efforts have been made to render the violently disruptive forces of such powder comparatively safe and practical. The Ernhardt powder is now being extensively manufactured at Baltimore, and has been introduced to some extent in the Middle and Eastern States. These compounds are prepared in two separate parts, which are not mixed until used. They are inexplosive separately, but said to exert eight or ten times the force of gunpowder when mixed. Water may be used for tamping, and no smoke or offensive odor results from the explosion.

Mr. Hafenegger, a Prussian, and resident of this city, has recently obtained a patent for an explosive, similar in some respects to the above, and which combines, in a notable degree, the qualities of safety and cheapness with most powerful explosive powers—several times greater than gunpowder. We are not aware that any special effort has been made to introduce this explosive.

Several compounds, variously made up of mixtures of chlorate of potash, with ferro cyanide of potassium, and with prussiate of potash—white sugar being added in each case—were introduced a few years since in Germany, under the general name of *white powder*. It is said that the process of the manufacture of these compounds is attended with little or no danger; that they are much stronger than common black powder, free, to a great extent, from the violently explosive character of the ordinary chlorate powders, and absolutely free from fouling—a very great desideratum in gunnery. No accidents have been reported from their use or handling, so far as we have been able to learn; but they do not appear to have entered into practical use—perhaps because they needed a little Yankee energy to make them go ahead, commercially.

A powder presenting some very remarkable characteristics was introduced about five years since by Neumeyer, of Saxony, to which the term "inexplosive" has been applied, from the fact that there is no possibility of exploding it, either during its manufacture, storage, or manipulation. Its energy is developed only when rammed home or placed under considerable pressure; then, weight for weight, its explosive power is considerably in excess of common powder; while bulk for bulk, it is fully equal. It is not injured by being thoroughly saturated with water and dried.

The ingredients entering into its composition are the same as those for common black powder—the secret of the extraordinary result obtained being solely due to the method of proportioning and compounding its ingredients. Less sulphur is employed, and hence a less quantity of noxious vapors are evolved—a point of great importance in underground mining. Modified modes of manufacture are employed to suit it for various requirements of either military or blasting purposes. Its cost is less than that of ordinary powder. In blasting it is said to be equally applicable to hard and close rock, as to that which is soft and seamy. A very good idea of the peculiarity of this explosive may be formed from the report of an exhibition of its properties at the grounds of the London Crystal Palace, three years ago. A small house, five feet square, built of brick, with heavy slate roof, and two open chimneys, made of five-inch tiles. In this house was placed loosely thirty-five pounds of Neumeyer's powder. On firing it, a large body of flame shot upward through the chimneys and continued until the powder was burned out. Not a brick, tile or slate was moved. Subsequently, three pounds of common powder reduced the building to numerous wreck. This experiment was made to show the safety of the Neumeyer powder when placed loosely and fired. Other experiments were made at the same time, to show its powerful energy when tamped in a bore-hole, or rammed in a gun-barrel.

If the reports with regard to this powder can be relied on, it presents absolute safety in manufacture and handling, with all the efficiency of the best gunpowder when rammed or tamped; coupled with greater immunity from deleterious gases, and equal cheapness in cost and carriage. Notwithstanding its apparent advantages, however, it does not seem to have come into practical use out of Germany, although *there* it still continues to be extensively manufactured and employed. There are numerous other explosive compounds which might be properly presented in this connection; but the brief time allowed for this paper requires that we should hasten to a consideration of the two most potent and promising explosives with which gunpowder has to contend—nitro-glycerine and gun-cotton—in their lately modified forms of manufacture. The former has been known to chemists for over twenty years; but its practical application as an explosive agent was first made by Mr. Nobie, less than six years ago. The latter—gun-cotton—was discovered by Schernhein, in 1846, the year previous to the discovery of nitro-glycerine. The extreme simplicity and safety of the mode of manufacture of this compound at once arrested the attention of manufacturers of explosives, and establishments for its manufacture were very soon erected in nearly every country on the European continent.

Gun Cotton.

Gun-cotton was originally prepared by simply placing the ordinary cotton of commerce, first thoroughly washed and dried, into a bath composed of a mixture of strong nitric and sulphuric acids. The chemical substitution takes place in about forty-eight hours, after which the cotton is removed and simply washed to remove the adhering acid. This, however, was a very tedious and slow process, and was often secured by placing it in a running stream for three or four weeks.

The explosive so produced was soon found to be extremely uncertain in its character and stability. Inexplicable disasters followed each other so rapidly that people soon lost all confidence in its use. But the chemists were still unwilling to give it up, and began to study earnestly for the cause of its instability, which was soon traced to the presence of free acid, that had not been removed in the washing. This acid, by the action of sunlight and air, underwent a process of decomposition, which often generated sufficient heat to cause an explosion of the mass. More thorough washing was tried, but without avail—explosions would occur. Various devices of winding, twisting, plaiting, and confining in air-tight cartridges were resorted to in order to remove, as far as possible, this danger. Saturation in water was also tried, and was undoubtedly the best device adopted for isolating the explosive. As is well known, each fibre of cotton consists of a long narrow tube, often twisted and doubled in every possible manner; and while the acid, by its penetrating qualities, would readily find its way into every recess, the water that was subsequently employed to remove it failed to reach many of those minute labyrinthian channels; hence the retention of a small portion of acid in spite of the most careful and protracted washings.

The difficulty thus appearing quite insuperable, gun-cotton has been nearly abandoned as a blasting agent, but still continues to be an object of great interest, on account of its application to the beautiful art of photography, and its large use in surgery in the form of collodion, which is simply gun-cotton dissolved in ether.

Such was the status of this explosive, when, a few months ago, a happy thought occurred to Professor Abel, an English chemist, that it was only necessary to destroy the tiny little tube in which was bottled up all the danger, to be let out at times, and often under circumstances so mysterious and unexpected, by simply purging the cotton—grinding up the fibre as rags are ground to a pulp for making paper. This being done before it was submitted to the acid bath, he rightly thought the subsequent washing away of the surplus acid would be a comparatively simple process, and one which might be made absolutely perfect. Subsequent experiment more than realized his anticipations, and not only rendering the cotton absolutely free, so far as time has yet shown, from any possibility of chemical change, but furthermore, to his astonishment, placing it in a condition perfectly inexplosive, in the open air, under any ordinary conditions of exposure or manipulation. The Professor has thus attained for his improved explosive the same modification of the original compound which had already been so unexpectedly secured by Neumeyer in his modification of common powder, and to which we have referred in the experiments at the Crystal Palace.

By this simple change in the mode of manufacture, without the addition of any new substance, Mr. Abel has so essentially modified the nature of gun-cotton that, besides the advantages already mentioned, it can be exploded in the open hand without danger; and so quiet is its combustion under such circumstances, that a delicate gold balance, in the pan of which it may be ignited, will not swing from its poise. And yet, when pressed into a cavity, and there ignited by percussion, it explodes with a force nearly equal to nitro-glycerine, and some eight or ten times greater than that of gunpowder.

The most recent report from this improved explosive is the result of some experiments made in January last, from which it appears that although the application of heat alone will produce only a slow combustion in the open air, still when percussion is applied, even to a loose mass, it explodes with all the violence of nitro-glycerine. Absolute safety, however, appears to have been obtained from self-ignition or from any dangerous spontaneous chemical change. Those experiments, so far as can now be seen, show that this late improved gun-cotton is more safe than gunpowder, for either use, storage, or transportation; while in efficiency it is multiplied many times. This interesting discovery is really the latest advance in the manufacture of explosives; and goes far to encourage the belief that gun-cotton may yet again come into use as a blasting agent. The fact that it is entirely free from any deleterious influence on the health of those who use it, is also a most important consideration.

Nitro-Glycerine.

The second, and just now most promising rival of gunpowder, is nitro-glycerine, which we have already said is no very recent invention; although its first introduction as an explosive agent dates back less than six years. The terribly disastrous results which attended the early introduction of this composition as an explosive are too well known to need any reference here. They have been brought painfully near to our own firesides. It is sufficient to say that this explosive, as first introduced, is now very generally abandoned; but the principle upon which it is based has not been lost sight of.

Experience is fast rendering almost universally applicable the maxim that to be forwarned is to be forearmed. When any known condition of danger is given, science seems ever ready to provide a way for immunity therefrom. It is only by reason of ignorance that we are unable to safely manufacture or handle any explosive. When we fully understand the nature and condition of the danger, we can then devise a remedy for its removal. Should we banish edge-tools, steam and gunpowder because they are dangerous, and because people will sometimes be careless? Let us rather look upon what are called accidents, even though inexplicable at present, as indications of something to be learned—something to be invented. In this age of scientific and mechanical progress, he should be considered behind the times who pronounces anything impossible. Ars we not about to fly?

Giant Powder.

This distinguished scientist who first demonstrated to the world the terribly effective energy of nitro-glycerine was by no means discouraged at the disastrous results which followed; but, like a true follower of science, at once set himself to work to seek out the hidden cause of its danger, and apply the proper remedy. His efforts were crowned with most unexpected success, and the same explosive has now been introduced, in a modified form, which is far safer than common powder, while it retains the full efficiency of the original compound. We have no time to pass in review the steps which have gradually led to this result, or the experiments by which its attainment has been proven. It is sufficient to say that the result is an accomplished fact, and Mr. Nobel has coined a new word to give his new compound an expressive name—*dynamite*. The dynamite of Europe is the giant powder of California. It is simply a new form of nitro-glycerine. A peculiar infusorial earth, finer than the finest flour, and yet consisting of the silicious coverings of what were once a shelled animalculæ, are saturated with this oil, and we have a brown powder, looking more like fine sawdust than anything else, and apparently as innocent of any destructive power as the dirt of the street.

The question of the safety of this new explosive is now, we believe, beyond a doubt, and we will not stop to dwell upon it, but pass immediately to what, just at this time, appears to be a more important consideration—the effect which its explosion is said to produce upon the health of those who use it in a mine.

How Its Use Affects the Health.

Experiments were made to test the action of nitro-glycerine upon the animal economy long before it was employed as an explosive agent. They were made from both a medical and a chemical standpoint. Inhalation, and placing it upon the tongue in a diluted condition, were both employed. The effects were extremely uncertain and contradictory—the same as now found in the practical use of the compound. Acceleration of the pulse, headache, and general prostration were the result, when sufficient quantities were employed; but it was found that a great difference of susceptibility existed among those to whom it was applied. Experimenters at this time had no other intent in the matter than to further the cause of scientific research. It was not then, as now, an important commercial article, out of which interested motives might grow to influence the views or observations of experimenters. All agree in the general results and conclusions.

It was found that one-twenty-fifth, and in one case one-forty-fifth part of a single drop—obtained, of course, by large dilution in a proper solvent—would produce the same effect upon some constitutions which, in others, required *two full drops*; or, in other words, the difference of susceptibility in individuals varied from one to nearly one hundred. These observations are amply sustained by the practical experience of the present day, and fully account for the apparent contradictory reports which we hear of its effects upon the health of miners. One is severely affected, another slightly, and others not at all.

We all know the effect of poison oak upon different constitutions; while one individual possesses perfect immunity from its effects in any form or under any circumstances, another can scarcely pass near one of these plants without becoming more or less affected by its influence. Persons who are susceptible to the effects of nitro-glycerine should let it alone, as those do poison oak who are susceptible to the poisonous influences of that shrub. Experience and observation teach us that the number so affected is very small—not enough to at all seriously interfere with its general use. Moreover, this susceptibility rapidly wears away with many by constant exposure, until, under ordinary circumstances, those who were seriously affected at first no more perceive any unfavorable influence—less even than they experience in the use of gunpowder.

A mistaken idea has gone abroad to the effect that the injurious consequences of its use result from the inhalation of the gases produced by its explosion. Nothing could be further from the truth. The only gases resulting from properly exploded giant powder are carbonic acid, free oxygen and free nitrogen, with the vapor of water. Their relative quantities, both in bulk and weight, have been accurately ascertained. Precisely the same gases are liberated by the explosion of gun-cotton, simply varying a little in their relative proportions and qualities; and yet gun-cotton is considered one of the most harmless of explosives in this respect.

The gases resulting from either are, in fact, far less injurious than those from the very purest of gunpowder—for that explosion liberates all which come from nitro-glycerine, and in addition, large quantities of carbonic oxide and sulphureted hydrogen—the nature of which latter is well known to all who have refreshed themselves upon the gases emanating from the breaking of a very ancient egg.

The mischief produced from the explosion of giant powder, when any arises, proceeds from the vaporization of a portion of the compound which is but partially decomposed, or burned, but not exploded. This vapor, suspended in the air, comes in contact with the tongue, or is taken into the lungs. Of course, the quantity so absorbed into the system, where ordinary care is taken, is infinitesimally small—so small, indeed, that no effect is produced except upon the most susceptible constitutions. If proper care is used in charging the blast, and a perfect article of powder is employed, it is impossible that any vapors can arise. Vapors may occur, however, from two causes. First, improper charging of the blast. If, in placing this explosive in the chamber, it is poured in so that any portion of it comes in contact with the walls of the chamber, above where the top of the powder rests, a small portion will adhere to the walls, and not explode by the impact which fires the charge, but be driven out in the form of nitrous acid vapor. That is the vapor which does the mischief. Now, to avoid this, all that is necessary is to load the charge by means of a funnel-shaped tube, which will convey this powder to the bottom of the hole without allowing it to come in contact and adhere, even in the smallest proportion, to the walls above the charge. Very few, we believe, take such precaution, although such care is generally recommended by the dealers in this powder.

Another difficulty has no doubt arised from the employment of an imperfect article. When the manufacture of giant powder was first commenced in this city, an inferior quality of acid was employed, which produced a powder that would not completely explode, but gave off a very small quantity of the nitrous acid gas already spoken of. These defects in the manufacture have been removed, and it is claimed that a much superior quality of powder is now prepared. It is confidently believed that the increased degree of perfection which is constantly being attained in all the various steps of the manufacture, and the improved modes of exploding the charge which are now applied, will yet be able to secure for giant powder as perfect an explosion as has been attained for gun-cotton. When this end is fully realized no possible trouble can be encountered in this direction. We shall, indeed, have attained the disideratum which has ever been sought for by all manufacturers of special explosives for blasting purposes—viz: a compound which shall possess a more violently explosive action than can be imparted to any of the sulphur compounds; which shall either cost less, or, what is the same thing, do a greater amount of work in proportion to its cost, while at the same time it shall be equally safe or safer for the lives and health of those employing it.

Its Comparative Explosive Force.

Another very important matter to be considered in the choice of explosive agents for blasting purposes is the relative bulk which may be required to produce a given explosive effect.

The smaller the bulk of the explosive required, the less will be the labor and cost for drilling out the chamber. It is claimed that in this respect giant powder has an advantage of nearly 100 per cent. over gun cotton, and 800 over common blasting powder.

An elaborate series of experiments has been made, by order of the Austrian Government, to test the relative explosive force of these three compounds, which appear to fully sustain these claims. These experiments were undertaken mainly for military purposes. We have here a diagram, copied from the official report, showing the comparative effects of the three kinds of explosives, etc.

Single and Double-Handed Drilling.

The almost universal testimony of mining engineers and superintendents on this coast, who have employed this powder, is to the effect that ores can be raised by its use nearly or quite one-half cheaper than by ordinary blasting powder. This gain is mainly effected in the saving of labor in drilling, as one man can generally do more drilling for this powder than two men can for that in common use. For the one single-handed drills can be employed in almost all cases, while the other almost as universally requires the use of double-handed drills. When we bear in mind the fact that a very large proportion of the labor of getting out the ore and extracting the precious metals therefrom is chargeable to the single item of blasting, some appropriate idea of the immense economic value of such an agent may be formed.

If we are not mistaken in our estimate of the value of this explosive, it must be considered as one of the most important economic aids to engineering operations, requiring the removal of hard rock, which has yet been produced. Its value to this State, if it can be generally introduced, can scarcely be estimated. It is to be hoped that the only objection now urged against it—its supposed injury to health—may soon be entirely removed. Honest and earnest efforts are being made in that direction. Our people generally, and the miners especially, who are called upon to employ it, should do so with unprejudiced minds—willing to countenance and encourage whatever may tend to reduce the cost of working, *without cheapening labor*. The same economy which induces the introduction of the new agent, will not fail to care for the lives and health of those skilled in its use.

Rifle Powder for Blasting Purposes.

Had this paper been read two weeks ago, there would have been no occasion for any further reference to gunpowder; but within a few days past the fact has been brought to the knowledge of the most, or all of those present, that some experiments have recently been made in the Empire mine in Grass Valley, with rifle powder as a blasting agent, and with, as reported, most unexpected results; the gain over common powder being very decided. It is possible that further and comparative experiments may lead to an extensive substitution of the more expensive and stronger rifle-powder for that ordinarily made for blasting purposes; although in the light of present knowledge, nothing more than this brief mention can be made.

Improvements in explosives constitute a matter of the greatest importance to human industry everywhere. The highest ingenuity, talent and learning of the day, are engaged in efforts to render more cheap, safe, and effective, the various explosive agents for which modern engineering enterprises are making such large and increasing demands. In no department of industry is such a want more deeply felt than in mining; and from the results of the last three or four years, we may safely say that the world has, through this means, entered upon an era of cheaper and more effective mining—one which in the end will prove equally satisfactory to miners and mine owners.

Conclusions.

The most terribly effective explosives which modern research has revealed, and which but a few months since were regarded as beyond human control, are now presented to us, ready for work, and as harmless for mischief as so much dust under our feet. They may be transported with absolute safety, or handled by a child with impunity, while unconfined; but imprison them, and all the mighty energies which are locked up in nature's secret store are called into exercise to burst their bonds. These important results are among the marvels of this wonderful age; and yet, considering the rapid strides which are now being made in scientific researches, we should not be surprised to see even these wonderful achievements utterly eclipsed before another decade shall have been added to the onward march of time.

Mr. Ewer was listened to with marked attention, and at the close of his reading received a vote of thanks from the Institute.

MAYFIELD, Cal., June 26, 1869.

DEWEY & Co., *Patent Solicitors, San Francisco*—Gentlemen:—In acknowledging the receipt of my Letters Patent, allow me to express my thanks for the skillful and trustworthy manner in which you have conducted my business before the Department at Washington. I am perfectly satisfied with the high degree of ability and integrity displayed in the management of my case, and I know of no similar agency in which I could place corresponding trust. Yours truly, J. M. JOHNSON.

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any part longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Big Work.—*Miner*, July 24th: Last week the Imperial tunnel was pushed in 22 feet, and now shows a total length of about 1,030 feet.

Mountain.—This claim, in Monitor district, shows a continuous vein. The length of tunnel to the point where the lode was struck is only 50 feet, and the depth under ground not more than 30; yet the lode seems solid, and the ore yields by assay from $25 to over $100 per ton in gold and silver.

CALAVERAS COUNTY.

Items.—*Chronicle*, July 31st: We are informed that since the completion of their branch tunnel, Paul & Co., whose claim is located near the Junction, are taking out large sums weekly....Brackett & Co. have also again struck the lead....Mr. Shaw's hydraulic "gives out" frequently, but we notice that his countenance is wreathed with smiles upon such occasions.

EL DORADO COUNTY.

Georgetown.—Placerville *Democrat* correspondence, July 28th: The Eureka Co. have got their mill started, but as yet have made no clean up. I am informed that the rock prospects well. Work was started last week in the tunnel. On the Taylor ledge, Gibbs, the Supt., is getting ready to put up the additional battery, and to sink the shaft another hundred feet. Wood & Co. are getting their mill along finely. The Woodside still awaits some energetic company, with capital, to pour out its treasures.

INYO COUNTY.

Cerro Gordo.—Los Angeles *News*, July 31st: Five wagons arrived in this city on Wednesday afternoon, bringing 400 bars of lead and silver bullion from the Belshaw furnace, Cerro Gordo. Three new furnaces are near completion in that vicinity. Water is very scarce, and but little mining or smelting can be done until the springs rise or the rainy season sets in.

MARIPOSA COUNTY.

New Quartz Mill.—*Mail*, July 80th: A 10-stamp quartz mill, situated four miles from Colorado, was completed last week, and has been crushing quartz from the Feliciana mine. A tunnel which taps the vein 400 feet below where the same was formerly worked, was finished a few months ago. There are 300 tons of good quartz now at the mill. The motive power is steam. The mine and mill are the property of Mr. Louis Trabucco.

On Sunday, a Chinaman picked up a piece of quartz, with gold, near McLennau's ranch, and disposed of it for $40. It has been found to be worth about $200.

Letter to same from Hornitos says: "The great prerequisite to the development of this rich mineral region is water; and if the Mariposa Co. would study their own interests, they would lose no time in constructing a ditch from the South Fork of the Merced of sufficient capacity to supply the entire country. This great mining district is 90 miles long by 25 in width of placers, and embraces thousands of rich quartz veins, to the development of which the waters of the Merced might be applied with ease. All the Mariposa Co. need to do to make up for all their former backsets is to raise half a million of dollars, construct a ditch, lease their placer and quartz veins, and we can prove to them by figures carefully calculated that the net income of said operations would not be less than $2,000 per day."

NEVADA COUNTY.

Items.—Grass Valley *Union*, August 29th: The Idaho cleaned up day before yesterday, after a two weeks' run, and the result was $12,500 in gold.

The Dromedary has been started up.

The Empire mine has all the miners it needs in drifts and stopes, and the mill is now running night and day on splendid looking quartz.

Allison Ranch.—Same of 30th: We visited this mine yesterday. We took up a number of pieces from the dump, and did not fail to find the yellow metal in any of it. It is estimated that the rock taken out will yield about $50 to the ton, but we believe it will do more. The mill will start to-day. A solid foundation of heavy stone masonry is being put down for hoisting works at the middle shaft. A new pump will keep the mine free of water. The old dump pile is rapidly disappearing under the stamps, and it has paid well. In fact, it has paid about forty per cent. of the expenses of all the heavy work which has been done in reconstructing the mine.

Mining Review.—Same of August 1st, says: "Taking a general view of the mining situation at Grass Valley, there is great cause for encouragement, and the prospects for a lively fall and winter are bright." North Star starts up in ten days. There is an immense amount of pay ore in sight. ....The Harterey cleaned up on Friday after a seven days' run with eight stamps. The amount realized was $3,012. There are 23 men working.....The Wisconsin mine employs 45 men, and the company are taking out good rock. McCauley's mill of Boston Ravine is now crushing a lot of rock from the Wisconsin, and good judges say that it will yield upwards of $40 per load. The company intend to put up a mill of their own.....The West Eureka is being worked all the time. An incline shaft has reached a depth of 50 feet. Some good rock has been taken out, and good prospects of free gold have been obtained from it.....The Union Hill mine employs 70 men, and bids fair to take a front rank. ....The West Idaho, near Slate Creek, is being worked. An incline has been sunk 50 feet.....The Empire is full of hands, and the mine and mill are worked day and night. The rock coming out is fair..... The Eureka and Idaho are doing as usual.

Rich.—*National*, July 31st: A couple of gentlemen at Allison Ranch yesterday, in order to test the richness of the rock, "timed" one of the stamps, and after a run of six minutes the blanket was washed and over 1¼ ounces of gold was realized.

Good Yield.—*Gazette*, August 3d: A crushing of quartz from Holbrook's ledge, recently made at Stile's mill, was cleaned up on Saturday, and yielded $33 per ton.

Sulphurets.—*Transcript*, July 30th: Clark & Days have just worked up 6¾ tons of sulphurets from the Wiscousin mine, which realized $92.59 per ton.

PLUMAS COUNTY.

The Crescent.—Quincy *National*, July 31st: We understand that this mine is looking better than ever before since it was opened. The rock is paying largely. The company are running 24 stamps and we are informed intend working the mill (36 stamps) to its utmost capacity in a short time.

SISKIYOU COUNTY.

Trinity Center.—Yreka *Union*, July 31st: Messrs. Cunnin's & Blackburn are opening some rich claims two miles above the American House on the Trinity river. They have flattering prospects. Mr. Fitch has struck some rich and extensive diggings near Trinity Center; three hands took out over $600 in less than three weeks.

TRINITY COUNTY.

Weaver Basin.—*Journal*, July 31st: The mining claims in weaver basin generally finished cleaning up this week. Particulars in our next.

Found Diggings.—Dick Brown, who commenced a tunnel between Fivecent gulch and East Weaver creek, has found ground that will pay good wages.

The Big Ditch.—A large number of claims have been located on Bolt's hill and vicinity, during the week, in contemplation of a supply of water being furnished from Stewart's fork.

Weaver Creek.—The Weaver Creek Fluming Co, has arrangements made to put in sixty boxes of flume this season.

Pay Rock.—*Appeal*, August 1st: We learn from disinterested parties that the Pennsylvania Mill at Brown's Valley has just retorted the product of 100 tons of quartz from the mine of the company—result five pounds of solid gold, valued at $1,300.

Colorado.

Central.—Cenver *News*, July 23d: A telegram from Central says that mining matters are prosperous. The Coaley lode has a 7-inch crevice of silver that sells for $350 per ton, 25 tons of which have been taken out in the last five weeks at an expense of $1,400. The Smith & Parmelee Co. shipped on Tuesday 179 ounces of gold, the product of six days run from second-class ore; currency value, $4,200, at an expense of $1,600. They get $125 per ton for first-class ore, and have enough of this in sight to keep them busy two years. Bullion shipments this month will be about $260,000.

San Louis Valley.—The Georgetown *Miner* says: "This entire country is being thoroughly prospected this season, and some important discoveries are being made. Col. Pfeiffer, one of Kit Carson's men, is exploring and prospecting the San Juan country, having with him 15 experienced miners, late workmen in the Cimarron mines, New Mexico. The mountains at the head of Hyerfano are being examined for gold. In that district Green Russell has struck fine paying diggings. Mr. Irwin informs us that there are 12 men at work at Union Gulch, Lake county. In California Gulch, says Mr. Baker, work is going forward with commendable activity and evident success. The 5:20 mill has suspended operations for the present. Pilot lode, in the same neighborhood, is paying largely from a dirt crevice. Have taken out as high as two ounces to the pan."

Prize Lode.—Central City *Register*, July 29th: We paid a visit on Monday to the Central Co's works on the Prize lode. Since our last the ore has improved both in quantity and quality. The mill has been started up, and 66 ounces of retort was the result of the first weeks' run, cleaned up on Saturday last.

Pleasant View Lode.—The shaft is 140 feet deep; the crevice from four to eight feet deep. The prospects are more flattering than ever.

Consolidated Gregory.—We are informed that the ore has been steadily improving in quality, and now runs from five to six ounces per cord.

Smith & Parmelee.—The stamp ore last week yielded 7¼ ounces per cord, and they run 3⅓ cords per day. The last lot of smelting ore sold was also considerably richer than any previous. The mill has recently been thoroughly repaired. The company is now free from debt, and realizes a handsome profit. The whole product of the mine for last week, including that from ore supplied to some 20 stamps outside of their own mill, will be about $4,000.

Enterprise Mill.—Last week several cords of ore from the Jones lode yielded 20 ounces per cord.

Idaho.

Items.—Silver City *Wave*, July 30th: The Minear mill has been crushing rock from the Home Resort lode ...The placers on Florida Mountain are showing better. ....J. H. Bixby has struck a ledge near Ruby in the placer ground. We hear that it prospects well.....The Idlewild mine on the mountain is being developed by Mr. Thompson.....L. F. Alpey is developing a ledge a short distance above the Home Resort. He has shown us some very good samples of ore.....Judge Watson thinks he has struck the mother of the whole family and system of ledges on War Eagle Mountain. He calls his discovery the Emerald.....The Allison hoisting works is a very complete piece of machinery. Some of the finest ore is coming out of the 150-foot level, which is being driven north and south from the main shaft.....We are assured that there is more work now being done on outside mines, that is to say, mines that are not usually counted as producers, than ever before since the discovery of the camp.

Idaho City Bedrock Shaft Co.—*World*, July 22d: This new company have secured title to bar and creek mining ground commencing at confluence of Moore and Elk creeks, and extending northerly along Bannock Bar and up Elk Creek some 1,000 feet, and have secured use of steam engine and boiler at the Lambing mill for hoisting and pumping purposes. The site selected for sinking a bedrock shaft, ten feet in length by five feet in width, is just below the corral of H. Goff on south side of Wallula street. Operations for sinking shaft and removing engine and boiler to the site of the shaft commenced on Monday morning last. The work is to be done by subscription.

The same of 29th says a double shaft has already been sunk and timbered to the depth of 45 feet. Two gangs of four men each labor at it night and day, and yesterday was the ninth day. The hoisting apparatus will be attached this week, and next week, perhaps, the steam engine pumping rig will be in operation to keep the shafts free of water.

Pioneer Quartz Mill.—Mr. James M. Classen has sold the splendid 25-stamp mill of the Pioneer mine on Granite Creek, to the Gold Hill Mining Co. The new owners will start the mill on ores from their own mine in a few weeks.

J. J. Tompkins and others have commenced to construct a ditch to bring water from Mooro Creek, about ten miles above here, to a gulch near the Gambrinus mine, where very rich prospects have been struck for a long way down the gulch.

Montana.

Highland.—*New Northwest*, July 23d: Work is going on at Discovery and the Cooley claims—only a few inches of water, however. The Bedrock Flume Co. get some 300 inches one-third of the time by reservoir. Nevins, Florence & Co. are running their arastras on Only Chance rock, crushing about four tons per day. It yields $100 per ton. It is said Prof. Swallow's mill will start up soon.

Phillipsburg.—A few are taking out rock for reducing, but so far no positive assurance of the time when stamps and pans will move has been given. Did miners have any assurance of a reasonable tariff for manipulating the ores under a good amalgamator, at least 100 men would set to work developing their property within 10 days. A new company, composed of experienced millmen, will, it is thought, erect a 20-stamp mill this fall. The Hot Spring Co. have again struck the ledge upon their mine, and richer than before. D. Brown is opening No. 1 east 1,000 feet northeast from the Hot Spring. Keep & Co. are engaged upon the Salmon lode, and extra labor has been put on the Mountain Queen. The St. Louis Co. have set teams at work hauling ore from their mine.

Gallatin.—*Republican*, July 24: There is prosperous placer mining at Washington Gulch, in this county. Some 30 or 40 men are engaged. On the hill this side of Sterling parties are collecting rock from the surface which by mill working pays $40 to the ton. About three miles below Sterling, Bradley is crushing in his arastra rock which paid two ounces to the ton. Half a mile below, an arastra is crushing rock taken from the surface near the Red Bluff lode which is paying a good dividend. Hall & Spaulding's quartz mill is running with great success near Sterling, on Meadow creek. The ore is taken from the Mother Hendricks lode.

Argenta.—Major Veale informs us that Argenta is looking up. In his furnace and lodes constant employment is given to 15 men night and day, and about as many more in the Tootle & Leach furnace. The Atlantic Cable lode has been worked to the depth of 60 feet; the Eaton, 110 feet, and the owners of lodes in the vicinity have all recommenced work with a hearty good will.

Green Campbell.—A shipment was made from this lode, a few days ago, amounting to $9,000, and another on Tuesday of $6,000. There is already 1,500 tons out, ready for the mill. The crevice is 9 to 15 feet in width. The exact yield will average $20 to the ton by the present process.

Red Mountain.—Col. Frothingham intends to set men at work on his quartz property immediately. He represents a large amount of capital, and will operate on a large scale.

Nevada.

COPE DISTRICT.

Placer Diggings.—Elko *Independent*, July 31st: Enright, the Cope expressman, brings more good news from that district. A Frenchman discovered new placer diggings four miles from Cope. He washed but one pan of dirt and got 15 cents.

Two Tons of Silver.—The express car of Wells, Fargo & Co. that passed through here on Friday afternoon had in it *two tons of silver bullion* for New York. "The mines of Nevada are giving out."

Little Giant.—Correspondence Grass Valley *Union*, July 30th: We have struck it rich in the Copo country. Our ledge is called the "Little Giant." The rock goes from $6 to $1,900 to the ton. I send herewith a sample of gold from our placer diggings. The sample is from five pans of dirt. (We judge there is about $2 worth of it.—*Ed. Union.*)

Bull Run.—Elko *Independent*, July 28th: We saw some big chunks of ore from Bull Run district Saturday that fairly made our mouth water. It was not "here a little and there a little," but rich all through it. The ore was from the Porter lode. 3,800 pounds are being taken to Dall's mill, in Washoe, to be worked.

The White Pine *News* of July 30th says of Bull Run ore: "Three assays shown us figure as follows: From the Fairview ledge, $467.53; two other assays from one other ledge, $4,216.20 and $4,415.19. There are at present 25 men in Bull Run and 60 in Cope district.

ESMERALDA.

Aurora.—Cor. of Sacramento *Union*, July 25th: Placer mines have been discovered about eight miles from Palmette, which the miners are working with fair success. Kernohan & Co. cleaned up their arastras at Bodie last week, and after a run upon 50 tons of rock they have realized 404 ounces retorted amalgam, valued at $13 per ounce, and $30 per ton of rock worked. As the arastras are worked by water power, the cost of carting and working the rock is less than $6 per ton.

REESE RIVER.

New District.—*Reveille*, July 31st: Another rich district has been added to Lander county. It is situated a little south of east of Austin, and distant about 65 miles,

and is only 16 miles southwesterly from Eureka district. It has been named the Spring Valley district. Mr. Murray showed us certificates of assays from the mines located by the company, which were up in the hundreds, and informed us that several wagon loads of ore were on their way here to be worked at the Manhattan mill. Mayor Frost corroborates Mr. Murray's statements in regard to the richness of the new mines.

Mineral Hill.—The news from Mineral Hill this week is meager. Mr. Ward brought in another batch of ore, some four tons, we believe, which were worked at the Manhattan mill, and yielded $440 per ton, which will do very well for top rock.

Prospecting.—Everybody has gone prospecting. The Mayor and two members of the Common Council are out, two of the three County Commissioners are out, one of our two Justices of the Peace is out, and we would not be a whit surprised to see the District Court adjourn and bolt out of town with the rest. Some discoveries made within a few miles of Mineral Hill have turned everybody's heads. Seriously speaking, there appears to be a rich discovery made in the mountains six miles south of Mineral Hill. Surveyor General Davis, who was at the latter place, heard that rich ore had been found in that direction, and he dispatched Q. Riho to explore the locality. Riho was successful, and struck an immense vein, which assays high.

The Manhattan, Lane & Fuller, Troy and Plymouth Co's now use the Giant powder. The Twin River and the Buckeye will do so shortly.

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

Crown Point.—Gold Hill *News*, July 30th: In the drift east from the shaft, at the 1,100-foot level of the Crown Point mine, a very heavy stream of water was struck night before last, 200 feet from the shaft, which increased rapidly, calling for all the pumping and hailing resources of the works to keep it down. It had raised, however, by midnight last night two or three feet above the 1,100-foot station. This new strike drains the 1,000-foot level above completely.

Bullion.—Yesterday's shipment of bullion from Virginia was as follows: By Wells, Fargo & Co., 16 bars, worth $33,336.27; by the Pacific Union Express, $8,237; total, $41,336.27.

Yellow Jacket.—Same of 31st: This mine is yielding about 200 tons of ore per day, from the 800 and 900-foot levels of the south mine, and the old Yolo tunnel. It will take four or five weeks yet to complete the repairs to the shaft between the 600 and 700-foot levels. This work, however, is not allowed to interfere with the working of the mine.

Crown Point.—Nothing new at the 1,000-foot level. No ore comes from it. Last Thursday night a very heavy body of water was struck at the 1,100-foot level shaft, which continued to increase despite all pumping; but yesterday it began to decrease.

Belcher.—Things look promising at all points, especially east of the 337-foot level, where several "rises" have developed good bodies of pay ore.

Justice-Independent.—Some promising developments are being made from the 200-foot level up. An assessment of $5 per share was levied last Saturday.

Sierra Nevada.—The second clean up for the month is being made to-day, and bids fair to come up to the average. The body of pay ore at the surface increases in extent.

Imperial-Empire.—The usual amount of ore from the upper levels. The clutch of one of the hoisting reels broke last Wednesday, which had the effect to suspend repairs and allow the water to rise considerably.

Chollar-Potosi.—During the week ending Friday, 1,350 tons were yielded by this mine, the assays averaging $67; the bullion shipment was $19,892. The mills are running up to their utmost capacity.

Gould & Curry.—Drifting east through the ledge, from the seventh station, is progressing admirably, being now over ten feet from the shaft. The old upper workings yield 45 tons a day, averaging $50.

Kentuck.—The opening out of the lower part of the mine, beneath the fire, through the 900-foot level of the Yellow Jacket mine, is progressing favorably.

Ophir.—West drift at the 700-foot level, 480 feet from the new shaft. Some rather more encouraging indications have been met with of late.

Hale & Norcross.—Yielding a little over 100 tons per day, principally from the fourth station level. The 175-foot level is also yielding a fair quantity and quality of ore.

Virginia Consolidated.—New shaft nearly 200 feet below the surface, and the work progressing at a very satisfactory rate.

Going Yet.—*Enterprise*, July 31st: The fire in the mines at Gold Hill is supposed to be burning still. It is confined within certain bounds, and will doubtless burn in a smouldering way as long as an unconsumed timber is left in the levels in which the fire is situated.

WHITE PINE.

The Strike—Bullion.—*News*, July 31st: "The suspension of operations by a few mines last week has been followed this by a number, and our bullion shipment has fallen to $40,861.77. The strike and the action of the strikers has caused this. Of this state of affairs the entire community outside the league has become heartily sick, more especially the great mass of miners themselves. Those who are disposed to work have now formed an organization for mutual protection. The plain truth is, the patience of this community is well nigh exhausted, and a single act of violence would exasperate the public mind to such a degree that punishment would not stop short of exhaustive vengeance. We are not writing idle words. Many of the mines will start up on Monday, full-handed in more senses than one. The men (about 113) in the Consolidated Chloride Flat Company will continue work at the reduction. The Nevada and Summit mines and the Auroro Consolidated will also start up at $4. The Mazeppa and others have already started, and are abundantly able to defend their rights. The Eberhardt people say that not another pick shall ever be struck in the Eberhardt mine at a rate higher than $4 per day to the man; they have stood the brunt of battle, borne the curses, and now they propose to see others moving along smoothly with the new order of things before they make another move.

There is already a considerable number of men working in the mines at $4 per day, and many others (nearly five-sixths of all in the district) will commence on Monday—and they will continue to do so. The officers of the law are fully prepared for any emergency, and the community is more than willing to enforce obedience to the law."

The effect of this firm stand was all that could be wished. Everything is quiet, all are at work, and regular wages at White Pine is now four dollars per day.

Items.—*News*, 29th: Eastern Slope Tunnel resumed operations yesterday. The tunnel is in 230 feet.....29th: Shaft in the Keil. Sheridan has struck ore at six feet. ....Seven feet more of blasting will connect the new drift in the John Dare with the old shaft.....Work was yesterday commenced on the McKean and Eldred mine, Mahogany Cañon, and a shaft will be sunk to the depth of 25 feet.....National tunnel is in 120 feet.....30th: Yesterday the Colfax claim changed owners at $12,000..... *Empire*, 27th: Assays from the chloride in the bottom of the Ravell shaft gave $800 to $1,000 per ton.....30th: Rich rock struck day before yesterday in the northern works of the Virginia mine.....The Buttercup mine on Blue Hill was purchased yesterday for a company of New York capitalists..... *Telegram*, 27th: We saw yesterday at Wells, Fargo & Co's, the first bar of bullion from the Logan & Lowis mill, at Swansea. It was the product of one ton of ore from a Treasure Hill mine, and valued at $350.....The Virginia ships ten tons of ore to mill daily.....In grading a place for a draft furnace at the Mazeppa mine, the workmen struck very rich chloride.....30th: Three bars from Earl rock yesterday, valued at $500..... 31st: We understand that the Aurora Consolidated Co., since their late defeat in Court by the Earl Silver Mining Co., have purchased a number of other claims in the vicinity of the Earl, and have commenced suit against the owners of the Earl mine, and attached all the ore on the dumps and at the mills, as well as some $15,000 worth of bullion.

Mills and Smelting Works.—*News*, 29th: Notwithstanding the obscure rumors afloat, the White Pine Smelting Co. was never in a more flourishing condition than at this moment. We were allowed yesterday to inspect the machinery. The engine was fired yesterday for the first time, with a view of producing results, and the blast works admirably. We were shown eight pigs of argentiferous lead, each weighing 100 pounds, ready for shipment, this being the result of only six hours' work. The present reducing capacity of the works is about six tons per day. We understand another large furnace and a 10-stamp mill are very shortly to be erected.

All the material for Stanford's new 30-stamp mill, about 800,000 pounds has arrived on the ground. The water can not be hoisted by hand from the bottom of the shaft as fast as it gushes up from the artesian, and workmen will proceed Monday to put the steam engines in order, to relieve the shaft so that boring can be continued.

Outside Districts.—*Empire*, 31st: Rock from the Josephine and Oriental mines, in Kern District, assayed $87. The Reporter went $100. The America, $139—by another assayer, $169..... *Telegram*, 30th: A specimen of ore from the Knowlton lode in Shoshone District was given us. Heated in a forge, its surface was covered with glittering globules of silver. The ledge is five feet in width, and well defined. The rock is easily milled. Following are some of the assays: No. 1, from the Knowlton ledge, $524.67; No. 2, from the Ben. Evans ledge, $307.85; No. 3, from the North America, $587.49; No. 4, from the Gettyshurg ledge, $219.91. These assays were obtained from averaged selections.... Same of 29th: Mr. J. A. Carter informs us that a Mr. Flowers and himself lately struck a fine ledge in Patterson District. It is located on the high mountains above Montezuma, above the Washington mine, and is fully 18 inches in thickness..... Potter & Hall have returned from the Spring Valley District. The Mayott ledge will average eight feet in thickness. Assays as high as $5,000 to the ton have been procured from it. The Providence ledge is 40 feet wide.

New Mexico.

Items.—Santa Fe *Gazette*, July 27th: We learn that the New Mexico Mining Co. will have their twenty-stamp mill ready in a few days. A new and rich lead has been discovered by the company.....The new placers continue to do a prosperous business. Gov. Mitchell has arrived and brought with him the result of another clean up of the 10-stamp mill, which amounts to $1,000 in gold.

Oregon.

The Excelsior Mine.—The *Oregonian* of July 24th contains the report of Dr. Veatch on this mine, which is situated in Bohemia District. We clip from it the following: "Out of ten assays from as many different samples, I found but one to fall so low as $8 per ton, while four reached an average of $2,000, the remaining five ranged from $5 to $250 per ton. The samples were chosen with a view to an impartial selection; but it cannot be supposed rationally that the above results could be sustained by a practical working test, on a large scale. There are good grounds for believing that large masses of the rock will yield $30 per ton, taken without selection. The quantity of workable rock from appearance is practically inexhaustible."

Utah.

The Seveir Mines.—The following notes are from the Shermantown *Telegram*, of July 26th: "These mines are situated within a few miles of Seveir River, about 180 miles almost directly south of Salt Lake City. They have for some time attracted the attention of miners, although they have created no extraordinary excitement. Many of the ledges have been traced for miles by the croppings, and contain mostly silver in connection with a little gold. The tests of their richness by mill process have been as yet limited. By assays the ore has shown a yield varying from $50 to $14,000 per ton. The mines are said to be easy of access, immense in size, with an abundant supply of wood and water. The population of the district is about 150—mostly Gentiles."

The White Pine *News* says that two miners have left Treasure City "for the rich placers and quartz gold diggings near the head of the Seveir River, Juab County, Utah. The placer diggings there have been known to exist and have been worked by the Mormons for more than a year, but not until recently was rich auriferous quartz found in the mountains some distance above the river and gulch workings."

The German Mails from China, Japan, etc., are to be hereafter forwarded *via* this city over the Pacific Railroad. Correspondence between the North German Confederation and our own Government is now in progress which will undoubtedly lead to such an arrangement. By this mode of transmission a saving of ten days will be effected between Hongkong and Germany.

Valuable Books on Mining, Mineralogy, Geology, Metallurgy, Etc.

The following is a revised list of books interesting to our more special readers. The newest and most complete treatises on subjects within the scope of this paper, including local maps, pamphlets of value, etc., will be added from time to time:

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BLAKE, (W. P.)—Report on the Precious Metals at the Paris Ex., 1869. (To be had through Members of Congress.)

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DANA'S Manual of Geology. Numerous Illustrations. 8vo. half morocco. Philadelphia, 1867. 6 75

DANA'S Text-Book of Geology. Illustrated. 12mo, cloth. Philadelphia. (School Edition) 1861... 2 25

DANA'S System of Mineralogy. New Edition. 8vo. cloth..... 10 00

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ELDERHORST'S Blowpipe.—Analysis and Determinative Mineralogy. Third edition, revised. 8vo. cloth. Philadelphia, 1865..... 2 50

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San Francisco:
Saturday Morning, August 7, 1869.

Notices to Correspondents.

B. Y., Santa Cruz.—According to a work recently published by Mr. Poulett Scrope on the subject of volcanoes, he observes that the two spots of the earth on which volcanic fires are most active at the present day are the wreath of islands around Borneo in the Pacific, and the circuit of the Caribbean Sea,—the two being exactly antipodal to each other.

Naturalist, Oakland.—When it is necessary to preserve animals or parts of animals in spirits, it is most desirable that they should be kept in dark closets, with opaque fronts, in cool rooms; otherwise the effects of light will be soon found to deprive the specimens attempted to be preserved, of their natural color, while light and warmth combine to cause the rapid evaporation and consequent loss of alcohol, both as respects strength and quantity.

Gobbler, Martinez.—The domestic turkey is now generally supposed to have descended from a Mexican variety, and not from the wild turkey of the Northern States. An able article on this subject will be found in one of the later volumes of the Patent Office Reports on agricultural subjects.

Hippophagus.—The flesh of worn-out horses may not be unwholesome, but certainly forms inferior animal food for the miserable classes compelled by want of ability to procure better to consume such, tempted by its low price. Attempts to fatten horses for human food have resulted in showing that the same amount can be obtained much more cheaply through the agency of oxen and sheep.

W. K. L., Los Angeles.—Arboriculture as a whole, and particularly in special departments, will at no distant day be deemed in California as equally important and even more profitable than viniculture. In no way can a man of small means so easily transmit certain wealth to his grandchildren as by planting suitable trees in such portions of his property as are not adapted to general cultivation. On this subject the old Scotch laird's advice to his children when on his death-bed may be advantageously reflected on: "Lads, be aye sticking a tree in, for it will be growing while ye are sleeping."

Invalid.—Lithium is the lightest metal known. As a carbonate, for some time it has been used medicinally in gout and rheumatism, and more recently as a bromide, especially when the neck and throat are effected. Bromine, in various compound forms, has lately been employed as a medicinal agent. The bromide of zinc has been found to relieve nervous power, and the bromide of lead has been recommended as a cool local agent in inflamed states of the mucous membrane.

Worthy of Consideration—Metallurgical Premiums.

From several sources worthy of high regard the suggestion is made to us that premiums should be offered by the Government for the advancement of practical metallurgy in our mineral regions west of the Rocky Mountains. The Sacramento *Union* has pointed out, with the aid of figures undeniable, the advantages that would accrue to iron manufacture somewhere in the interior—say at Salt Lake, or on the slopes of the Sierra Nevada—for railroad iron alone. Premiums operate very efficiently in favor of first beginnings; and it is not improbable that with the existing local demands for iron, even a moderate premium would call into existence so important an industry as iron production. California has offered a premium of this kind, which applies to iron deposits adjacent.

Of still greater practical bearing and of more general interest is the subject of working our ores. Light is needed, such as can be obtained only from tests of practice, as to the best methods for beneficiating certain ores. By offering a premium for the best process of working pyritiferous gold ores containing zinc blende for example, a cloud of difficulty would at once be swept away, that hangs at present over entire districts of richly-assaying gold veins that are lying unworked for no adequate reason in the world. Let there be a premium for the best method of working gold ores containing galena, or fahl ores,—which abound and are dead property, though rich, merely because the metal will not separate itself to unskilled hands that seek to tempt it out with quicksilver. Let there be a premium for the best method of saving float gold. For working silver ores, sulphurets, and carbonates or antimonides, or fahl ores, might be specified, with or without lead and copper of a certain percentage. The "working-up of a process" adapted to particular ores, and localities or conditions, is an undertaking of no small labor and expense; yet the moment that the truth has been demonstrated, the moment that the principles of metallurgy have been applied to economical questions bearing on the issue of prosperous mining, the results become general property, and the benefactor of the public, if he be liberal, is out of pocket for his pains. If Legislatures—the men who are to represent the interests of the public—can afford to be public-spirited in a land of grab-law, such as is developed by our mining excitement antecedents, here is one of the best opportunities that can be conceived of to benefit the interest which was the fore-runner of all our prosperity and of our very existence,—the interest that has built our cities, our mountain roads, the Panama Railroad, and the Pacific Railroad; yet that which has been called, with bitter depreciation, "our paralyzed member."

The generation of public leading men of the Pacific Coast who are broad, liberal, far-seeing and public-spirited, has not yet developed itself, or has not asserted its rightful prerogative to give direction to public affairs. We are yet a small people, provincialists, revolving around petty orbs of a golden glimmer, around which are many rings; forgetting the glorious freedom that we learned in "early days," and to a degree oblivious of the grander national and commercial interests and relations that will one day elevate California to a significance and importance far more real, in the civilized world, than we have yet attained.

So small a thing as the invention of the Pattinson process in our fathers' days, for the desilverization of lead, had the effect to reopen mines in many countries, employing tens of thousands of people, and keep them open prosperously to this day, which had been lying unworked for centuries. A trifle affecting the out-bringing in a mining district makes all the difference between paying and languishing.

Mining is not our "paralyzed interest"; but successful mining, in all but that kind which in older districts is called robbing of the earth, demands intelligence and an undaunted study of all the practical and theoretical points involved. Whether the State be wise or stupid in its policy of fostering and cultivating this root of its prosperity, certain it is that mining and metallurgy will, in the long run, take care of themselves.

Another Test of Barlow's Anchor.

A more thorough and practical test of the anchor recently invented by Mr. E. T. Barlow, of this city, was made on Thursday last, in an open field at the junction of Folsom and Fifteenth streets. Our readers will recollect the mention we have made of previous trials of this anchor, at the Mare Island Navy Yard, and in this harbor; both being from on ship-board. The trial, on Thursday, was made on land and intended to be concise in character. This anchor, weighing 595 pounds, was placed upon the ground about one hundred and fifty feet from an anchor of the common form, weighing 900 pounds. A six-ply rigging was run through two blocks, with each end of the running part applied to a winch, midway between the two anchors, thus drawing equally from each direction. Each block being connected with its respective anchor, the strain, when the power was applied to the winch, of course came upon both anchors alike; hence, if the holding capacity of one was greater than that of the other, the weaker one must necessarily approach the winch nearer than its opposite.

In this trial eight men were placed at the winch; at the first test the Barlow anchor was dragged five feet, while its opposite moved eleven. The anchors were then reversed—the Barlow being placed upon the ground previously occupied by the common anchor; when, upon a second strain being applied, the Barlow dragged but two feet against seven for the other. The strain put upon the anchors was as great as could be brought to bear upon a ship of 400 tons, under any ordinary circumstances of severe weather.

The trial was pronounced fair and most satisfactory, and resulted in a complete triumph of the Barlow, over a common anchor of almost double its weight. The test moreover showed the utter impossibility of the Barlow anchor ever becoming fouled by the chain. During the trial a slight mechanical defect was noticed in this anchor—a winding, which caused it to fail of the full efficiency due to a perfect piece of work, and which was overlooked in its manufacture. Had it not been for this circumstance the test would have been even more in its favor. This defect in no way affects the principle of its construction, and can be readily removed at the forge. We are pleased to record this new and additional evidence of the value of this invention. The ground where this trial took place may be seen at any time, and the distances measured, as confirmatory of the above report.

Memorial to Faraday.—On June 21st, a meeting was held at the Royal Institution for the purpose of paying homage to the memory of Faraday. Mr. Dumas, the eminent French chemist, of whose address on the occasion of the opening of the Faraday lectures a few days previous we speak elsewhere in the present sheet, was present, and made appropriate remarks. The meeting voted to erect a public memorial,—to be decided on by a joint committee of scientific men.

The Round Table.—This journal is now merged in the New York *Citizen*, which will assume the style of the old *Round Table* at the end of its present volume, and will consist of twenty-four pages.

An American System of Mining.

In this idea, as presented to the Academy of Sciences by Mr. Raymond, U. S. Mining Commissioner, there is something progressive and quite to the point.

As Americans, up to this, time we have never assumed to claim any of our systems as *par excellent*, giving to other nations the credit of more wisdom and experience in mining than we possessed, and we may say properly, too; but we are now becoming experienced, and are working up new and effective systems of our own, based on science, and what is as clearly reliable—practice; systems which, for perfectness and cheapness, have proved the strongest and most desirable.

The pan silver process of Washoe, though at first considered unscientific, in the sense of chemical affinity, has proven itself strictly so, and more profitable, consequently more valuable than either the Freiberg, Patio or other processes of European or Mexican origin, against which it battled for supremacy. This is purely an american system, and has become quite popular elsewhere, as well as in Washoe.

To improve the Knox pan, as first introduced, there have been innumerable new inventions, to enumerate which would be quite a task; but the most prominent of which, are the Varney, Wheeler & Hepburn pans, none however presenting anything new, in point of chemical operations, but each varied in a mechanical sense.

On the other hand, we have those who are ostracizing the iron pan working, and paying no respect to past systems, usages or ideas; but who are plowing up new ground in the broad fields of electric, chemical and mechanical science, and who may yet present a system superior to all; having strong claims in both a scientific and practical sense. Step by step we are certainly moving up to a more superior system of working. One fact which inspires us with some confidence in this respect, is the remarkable success that has attended experiments upon the several systems. Who will carry off the palm of introducing what will be generally accepted as the "American System"—which must embrace the greatest economy with perfectness of working economy both as respects machinery and manipulation,—we will not pretend even to conjecture. It is the battle of a few ardent workers for the favors of the multitude, who have no greater appreciation, though we are sorry to say it, than the benefit it will be to them in gold and silver.

That there should be some plan adopted, either by State or National government, whereby statistics can be gathered and made available and profitable to all, is evident to every experimenter, inventor or millman, who thinks and desires to acquire information of the progress of his pursuit, as well as those who desire it in the sense of science, or as a question of political economy. The Pacific States are the mining States of the Union; and it is for them to devise a plan, which at the least expense may bring about that order of things for the mining interest, which shall prove the greatest good to the greatest number. To this end we shall earnestly look for suggestions.

In these progressive times we must not, in our conceit, be content with what we have, only, and what we are doing, individually, but reach out for something better, if it can be had, for individual as well as the general good.

Another Flying Machine.—A mechanical genius at Windsor, Sonoma County, has invented a flying machine. He calculates that an operative machine can be built for a small sum which will "fly like a bird" and beat the "late velocipede."

More Snow Sheds.—The Pacific Railroad Company is increasing the extent of their snow sheds. Their success has been fully tested during the two past winters.

Sheffield Scientific School. — We have received the programme of exercises at "Commencement," July 19th, at the above named institution. We are reminded hy it that "the world moves." The contrast hetween the subjects choseu for *theses* hy the graduating class, and those which we used to read upon the old-timo commencement programmes, is striking enough. How much more "practical," and more likely to he of use in our day and generation, is an elsborato paper npon "Sewers," than one upon the "Character of Socrates"! "The Utilization of power in Machinery"; "Fonndations in water for Bridges"; "Natural intermittent springs"; "The wster supply of citics"; "The gold placers of California"; "The silver region of Colorado":—these also are titles which we note among those upon this programme. The fresh and vigorous young intellect of our country finds delight in grappling with thoso problems the solution of which will soonest ameliorato the condition of the race. Classical students are voted old fogies, and classical stndies musty. For our own part, we go for the reform,—within certain limits;—although wo wonld by no means altogether ignore the classics, lest the peculiar philological training which they alone can give, be neglected, and the student consequently fail to acquire that felicitous exactness in communicating his ideas to others, which ao greatly enhances their "telling" valuo.

White Pine Miners' League—Violence. Since our mining snmmary went to press, Treasure City telegrams announce that further demonstrations have heen made hy the Miners' Union. The dispatch of the 4th, says that night ahifts working for $4 were driven out of the shafts. Shots were fired in one instance. The President of the Union and several other members were arrested next morning and sent to jail. Another telegram on the 5th is as follows: There are no demonstrations to-night hy the Miners' Union. The lock-up and mines are strongly guarded, and a full force are working the mines. A numher of the Miners' Unionists left the district yesterday. Nine of them were arrested yesterday, and will he tried soon.

A meeting of citizens is called to-night to devise means to protect the property of citizena and insure peace. There are rnmors of threats to burn the city.

A Wail from Nevada City.—The *Gazette* mourna the folly of the Atlantic touriats who are visiting California this season, but fail to call at the "huh," where the gold comes from that keepa the Government in motion. It says that after seeing nothing else except this city, "they will probahly return to the East and recount to the wondering thousands the magnificent fruit *raised in San Francisco* that they saw displayed in Washington Market, and what quantities of gold dust arrived at the Mint daily, taken from the sand hills around the city."

We can only suggest, hy way of consolation to our friends in that county—get a railroad.

Illustrated San Francisco News.—This journal fulfills, so far as we have seen, the promises contained in its prospectus. The especial feature is its style of illustration. We rather like the zincograph. The effects which are producible by its means are really surprising. The manager of this department in the publication in question, is unmistakahly a genuine artist. We hope that the enterprise will he a success.

Union Hotel.—Our agent, who has traveled enough to know "what's what," makes special mention of the above named house in Nevada City. It has been kept well and long by Messrs. Eaton & Williamson, proprictors.

An Improved Plane.

In practical mechanics, wood is fast becoming superseded by iron. Tools, especially, which require to be accurate, and that are exposed to much wear, are now made of iron or steel. Planes form about tho only exception. They are still made of wood. It is surprising that it is so, when we cousider the severo and nice mechanical service to which they are applied. They should he at all times accurate and durable; hut all admit that wooden planes are rarely true, and, if made so, qnickly wear or spring out of shape. Why, then, are they so generally nsed? Simply hecanse iron planes, of proper construction and cost, could not be had. The iron planes made and used in England, and to some extent here, work perfectly, hut their cost is three times, and their weight more than twice that of our wooden planes; and like all iron planes heretofore made, they "stick" to tho wood, and require a greatly increased power to move them. This prevents their general nse. This adhesion is dne to their nearly perfect faces,—for, if entirely perfect, and placed upon a surface of wood equally so, they would adhere to it with a forco equivalent to fifteen pounds on every square inch of contact. Practically, however, the difference is as ahove stated. To overcome this adhesion, the plane herewith figured is fluted or grooved upon its face, parallel

to its length, hy which the increased friction and the atmospheric pressure are at once removed, while the exactness of the working face is still maintained. The next objection, that of weight, is overcome hy the construction of this plane allowing it to he made of the same weight as the average of wooden planes of the aame kind. The cost is less than half that of the English make, while none of the excellonciea of those planes are overlooked. This is effected hy the perfect machinery employed in the manufacture of its different parts.

This plane is readily adjustahle hy ingeniously devised joints, levers, knobs, etc., hy which the hit is removed or fastened, the cut regulated, the edge aquared, the throat adjusted, and the cap placed. All these changes are made almost instantaneously, and with far greater precision thau can he done with the ordinary wooden planc. The accompauying figure conveys a very good idea of the general appearance and construction of this improved tool, which is now, for the first time, introduced into this State, and may he seen at the store of H. T. Graves, 412 Clay street.

Earthquakes in the Southwest.—Tho Valley of the Mississippi is hecoming almost quite as "shaky" as the region of country hereabouts. It will be recollected that the citizens of St. Louia were very much alarmed at two o'clock on the morning of the 2d instant hy an earthquake shock, which aroused most of the residents of that city from their midnight slumhers. Seven distinct shocks were felt ahout the aame time at Memphis, two of which were quite severe. The shocks were felt over a region of country of several hundreds of miles in extent—full as great as that effected by the great shock in this State last October.

Another severe ahock was felt at St. Louis on Monday morning of last week.

A Specimen.—J. M. Buffington, Secretary of the Alleghany Consolidated G. M. Co., Sierra county, Cal., has ahown us a quartz *chispa*, as big as a double fist, estimated by specific gravity to contain 6.65 ounces of gold, worth about $118.22. This mine evidently prospects well, although we are not assured that such specimens are to be found every day.

Steam Joint Packing.

Messrs. A. H. Hall and H. T. Lee, of Marysville, hold a recent patent for what they consider an improved metal packing for stationary joints in steam engines and steam and water pipes, a small illustration of which wo givo herewith.

The packing is made of malleahle metal. Fig. 1 represents a section such as would apply to the corner of a steam chest. The holts whioh hold the cover of the steam chest pass through the holes represented in the packing, thereby holding the packing in its place. In drawing the joints together, the pressure comes upon the rim of the packing only, and it is easy to see that it is thereby more certain and ready to fit itself to the inequalities of the surface than if the packing was flat. Fig. 2 shows the circular form of packing for pipes.

The proprietors claim that by this device joints are made perfectly tight, hoth inside and out, and that hy thus perfectly closing the inside of the joints of the steam chest of an engine, the steam cannot cut away the inner edges of the joints; so the chest will last as long as any other portion of the engine. The joints may he opened and closed as often as required without injury to the packing, or decreasing its efficiency. Also, that the packing will not he forced out of place hy pressure, and when properly made aud applied it is permanent.

It is certainly a very simple device. In their advertisement the proprietors refer, hy permission, to well known engineers for practical information.

Silver in New Hampshire.—The old lead and silver mine at Madison, N. H., long ago discovered and recorded iu Dr. Jackson's survey of the geology and mineralogy of the State, has heen lately re-opened. "The Chocorua Silver Lead Co." are employing ahout thirty workmen, and have got out 1,500 tons of ore. Fifty per cent. of this is metal—silver, lead and zinc. The company crush the ore and separate the metal. The lead holds silver at the rate of from sixty to ninety ouncea a ton; and is sold to a reducing company in New York at from $150 to $250 per ton. According to this, each ton of ore aa it comes from the mountain is worth over $75 iu lead and silver. The mine is worked to a depth of sixty feet.

The Mormon Schism.—Two of Joe Smith's sons nave arrived in Salt Lake City. It is helieved that there will he trouble in the camp. One of these young men, David, is not ouly a good speaker, and of agreeable address, hut he is withal fully possessed with the belief that his older brother, Joseph, now living in Illinois, is the rightful head of the church, and that Young is an interloper. Moreover, he is a hater of polygamy, and is looked up to, hy some 15,000 dissenters in the western country, as the man who is destined to "deliver them from hondage." The "Destroying Angels" will have to silence this handsome young fellow, and that soon,—or the hoary Brigham will find himself all at once "in the vocative."

The Eclipse To-day.—Be ready with your smoked glass at 1.28 P. M. The obscuration is only partial for San Franciscans, the line of total eclipse being north of us, and extending southeasterly from a point in Alaska, in latitude 61° 46′ N., longitude 68° 4′ W. (of Washington),—where the eclipse will he total at noon,—through the southern part of Minnesota, toward the Atlantic at Newbern, North Carolina. We have given the programme more fully in a previous issue.

New Books.

A Treatise on Rope-Making, as Practiced in Private and Public Rope-Yards, with a description of the manufacture, rules, tables of weights, etc.; adapted to the trade, shipping, mining, railways, builders, etc, By Robert Chapman, formerly foreman to Messrs. Huddart & Co., Limehouse; and master ropemaker of H. M. dockyard, Deptford. Revised edition. Philadelphia: Henry Carey Baird. 1869.

The author of this book speaks of matters with which he is acquainted; having, as he says, been employed in all the hranches of the husiness as ropemaker, sailor, and rigger, for many years. The whole matter is rednced to fignres, and the working rules and tahles are numerous and full. For sale by A. Roman & Co. Price $1.50.

The Painter, Gilder, and Varnisher's Companion; containing rules and regulations in everything relating to the arts of painting, gilding, varnishing, glass-staining, graining, marbling, sign-writing, gilding on glass, and coach painting and varnishing; tests for the detection of adulterations in oils, colors, etc.; and a statement of the diseases to which painters are peculiarly liable, with the remedies. Thirteenth edition—revised, with an appendix etc. Philadelphia: Henry Carey Baird. 1869.

The number speaks for the popnlarity of the former editions of this hook; and the very full appendix, which the present one contains, hy no means detracts from its merits. The "principles of harmony and contrasts of colors" is a most interesting snhject; and Chevreul's treatment of it forms a part of that appendix. No painter, in these days of competition for the favor of an appreciative public should he without this hook. For sale by A. Roman & Co. Price $1.50.

The "Alta" on Earthquakes.

Some two or three years since, the *Alta* gave an elahorate exposition of its "views" upon this snbject; and enunciated a theory of its own, which it took pains to declare was the result of long and careful thonght. It does not seem, however, to have heen very generally adopted hy the scientists of the day. We may say, in fact, that we have never heard of it aince. But a recent article in *Blackwood's Magazine*, the object of which was to show that "these convnlsions are due to distnrbances in the crust of the earth, occasioned hy electric action," etc., has brought out the *Alta* again. After giving several quotations from the article aforesaid, it complacently winds up thus:

"We may remark, in closing, that the writer in "Blackwood" is aomewhat mistaken in putting forth hia viewa npon earthquakes as a "new theory" on that auhject. The idea that earthqnakes were due to electrical derangement, rather than to internal convulsions, was presented years ago in the columns of the *Alta*. The only difference hetween these two theorica is, that while the writer in "Blackwood" holds that the outer rim, or crnst of the earth is shaken hy these disturhances, the views presented in these columns, though admitting fissures and rents in the aurface, were to the effect that the commotion is principally confined to the structurea upon it."

"The only difference" is good. According to one of the "two theories,"—as the *Alta* itself virtually says ahove,—in an earthquake, the earth moves, and according to the other it doesn't. That's all.

Title to the Idaho Mine, Grass Valley.—The *Union* gives Commissioner Wilson's decision in regard to this claim. It is the first extension of the Eureka; and its application for a patent was objected to by the Schofield Company. "It is decided that a pstent should issue to the Idaho Co. for their claim of 3,100 linear feet along the Eureka lode, as applied for."

Moore's Flat Destroyed.—On the last day of July, the husiness part of this town was entirely destroyed by fire. The loss is about $75,000,—half of which is covered hy insurance. Most of the dwelling honses escaped. The mines in the neighborhood are paying well, and enough of the business houses to serve the purpose will he rebuilt.

Those 300 mahogany logs received from Central America by Hobbs, Gilmore & Co., are finding a ready sale. ***

Moving Machinery Photographed.—M. Bourbouze, in explaining the gas machine of M. Hugon, experienced difficulties not anticipated, while demonstrating the relative movements of the slide and pistons; and was obliged to repeat several times the same design, with the organs in different positions, with only partial success. In studying to remedy this defect, he has succeeded. He constructs his photographs in movable parts. By turning a small winch the whole design is correctly demonstrated; the piston and slides repeat successively the different relative positions taken by the real machine. This result has been obtained by means of a very simple arrangement. Each movable organ is photographed on a special glass, and these different glasses are arranged in a frame which contains, on a fixed glass, the photography of the fixed parts of the apparatus represented. The movable glasses are each fixed to a connecting rod moved by a single winch; the length of each connecting rod being calculated in such away as to produce accurately the movement required.

The Audubon of the Pacific.—There is at present an American ornithologist residing in Mazatlan engaged in making a collection of the birds of the Pacific Coast, whose genius has already won for him the name of "the Audubon of the Pacific." His name is A. J. Grayson. Like Audubon, he is a native of Louisiana, and like him, he has devoted his life to a science most laborious and tedious in its completion, nice and particular in all its requirements. The great work, when finished, will be in four volumes, containing one hundred illustrations. The birds are represented in harmony with their habits—that is, each drawing contains representations of the plants, flowers and trees situated near the localities most frequented by the birds. Most of the pictures have three or four figures, representing the birds in their peculiar and most graceful positions.—*Correspondence Indianapolis Journal.*

Missouri Tin Mines.—Professor Shepard, of Amherst College, examined the tin mines near Iron Mountain. During his visit the managers showed him fine specimens of tin said to have been taken from their ore. They put several specimens of ore through the separating process, and exhibited a large quantity of tin as the result. He accordingly telegraphed to parties interested, "Evcrything appears to be as represented." Before making a regular report, however, he took specimens of ore, selected by himself, to his own laboratory; and he found that the percentage of tin was too small to pay for working. His final report was to that effect. He thinks the mines worthless, and says much money has been unwisely spent there.

One-horse Carts.—A horse, when he acts singly, will do half as much more work than when he acts in conjunction with another; that is to say, two horses will separately do as much work as three conjunctively. This arises, in the first place, from the single horse being so near the load he draws: and in the next place from the point or line of draught being so much below his breast, it being usual to make the wheels of single-horse carts low. A horse harnessed singly has nothing but his load to contend with; whereas when he draws in conjunction with another, he is generally embarrassed by some difference in rate, the horse before or behind him moviug quicker or slower thau himself. He is also frequently inconveuienced by the greater or less height of his neighbor. These considerations give a decided advantage to the single-horse cart.—*Lord R. Seymour.*

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For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

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nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long ou the hair, giving it a rich glossy lustre and a grateful perfume.

Prepared by Dr. J. C. Ayer & Co.,
Practical and Analytical Chemists,
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Gold Metal.
THE GOLD METAL WATCHES
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Surpass anything yet made in the way of an Imitation Gold Watch. They wear well, and keep good time.
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San Francisco, May 12, 1869.
This is to certify, that I have carried one of the small size Gold Metal Watches which I got of C. E Collins & Co., and I find that it runs as well, and keeps as good time, as any watch I ever carried, and I can therefore recommend them. I am engaged on the Sacramento steamer "Chrysopolis." C. A. COLBY.

I am engineer on the San Jose Railroad. I have been carrying one of C. E. Collins & Co's watches for about one year, and I can safely say it is the very best watch for time that I have ever seen. GEO. CORNWALL.
Engineer on the San Jose Railroad.

Batavia, July 6th, 1869.
Messrs. C. E. Collins & Co.—Gentlemen:—I received the Lady's Watch sent by you, and was much pleased with it. I wish to know what you will furnish me six of them for, with chains to match. Yours, etc.,
W. H. DUKE,
Batavia, C. P. R. R.

The public are cautioned against buying their watches at high prices, as many of them are sold for genuine *Gold Watches*, at from $100 to $150 each.
For List of Prices and Description of Goods, send directly to us. Can be sent by Express to be paid for on delivery.
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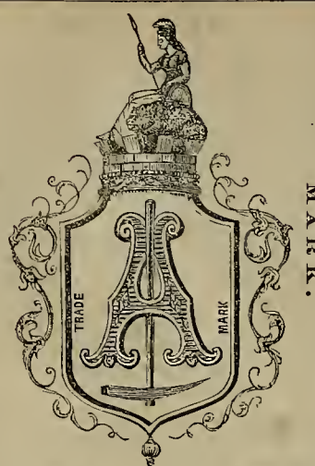

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This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.
It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.
California Vichy Water is used with success in many cases, such as—
Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the Indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.
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Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

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A Two Thirds Interest
OF THE
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Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 500 feet. A force of thirteen men only are required to keep both mill and mine running regularly.
On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which fact goes to prove that a heavy deposit of ore was once contained in the croppings of these shutes, which, by all former and present theories of deep mine workings, came from below, indicating that when struck upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.
This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense of mine, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.
The last level 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $1 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.
Now I propose to sell two thirds of this valuable property for $16,000, cash; and any party who desires to purchase a property of this kind—which theory has proven that requires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.
For any further particulars, direct by letter to Wm Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.
22v18tfqr WM BOSWORTH.

A Long Desired Article
For cleaning the head and hair. The cleaning of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using
CAMILLE CHAMPOO,
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July 11, 1869. ELAM & HOWES.
14v19-3m

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Patent Wax Candles,
Have now an established reputation on this Coast. Their uniform quality, much superior to any Adamantine Candles, is
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They burn longer and better than other kinds, and are really the most economical Candles in the market.
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110 California street.
Manufacturers' Selling Agents. 21v18-3m

FAIRBANK'S PATENT
U. S. STANDARD

COUNTER AND
PLATFORM SCALES!
Also, large Scales for weighing loaded wagons of Ore, Hay, etc., from 6,000 to 40,000 pounds capacity. Manufacturer's Branch House,
FAIRBANKS & HUTCHINSON,
12n California street, San Francisco.
Agents for Baldwin's Improved Money Drawers.
☞ Send for a Catalogue. 18v18eow6m

OCCIDENTAL
Insurance Company,
OF SAN FRANCISCO.
Cash Capital, - - - - - - - $100,000
GOLD COIN.
Office S. W. corner of Montgomery and California streets.
Fire and Marine Insurance.
All Losses paid in U. S. Gold Coin.
CHR. CHRISTIANSEN, President
B Rothschild, Secretary 20v17-3m

Where to Advertise.—The attention of traders and mill machinists is called to the fact that the *Mountain Messenger*, of Downieville, Sierra County, possesses many special advantages as an advertising medium over a majority of the interior press, it being the only public journal published within a radius of sixty miles, in the richest and most populous mining sections of the State. Its weekly edition is double the average of country papers, being without the range of large dailies, and having no competition at home. Its local colums afford many items for our city cotemporaries, while its rates of advertising are reasonably low 10v17tf

Professional Cards.

J. S. PHILLIPS, M. E.,
CONSULTING ENGINEER,
Examiner of Mines, etc.,
423 Washington street..... ..... San Francisco.
(Having had 33 years' experience in Europe and America,) supplies drawings and designs for Pumping, Hoisting, Crushing, Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Determination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

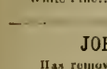
GEORGE B. ELLERY,
Practical Mining Engineer,
TREASURE CITY,
White Pine..... .....Nevada.
2v19tf

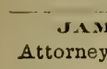
JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
510 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California an Leidesdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf


DR. N. T. WHITCOMB,
Dentist,
No. 205 Third street, up stairs, San Francisco
Teeth filled with fine gold, artificial bone, and platina.
All Plate Work made and repaired of the best material, at the shortest notice, and warranted.
None cheaper and better on this coast—call and examine specimens.
North Beach and South Park cars pass the door
3v19 3m N. T. WHITCOMB.

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to **331** Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

MEUSSDORFFER,
HAT MANUFACTURER
And dealer in
Hats and Caps
AT WHOLESALE AND RETAIL.
535 and 537 Commercial street.....San Francisco.
125 J street..... .....Sacramento
Corner of D and Second streets.....Marysville.
72 Front street .....Portland, Oregon.
Our wholesale House, 528 Commercial street, extending through to 537 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 23v16-3m

Blake's Patent.

THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's
Patent Steam PUMP
It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted POSITIVE under all circumstances. Send for a circular. W. O. M. BERRY & CO., 114 California St., San Francisco, Cal.

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa, have, by the skilful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of home paths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a reputation for their prepared Cocoas, but we doubt whether any thorough success had been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of "Maravilla" Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage.
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate, Steam Mills, Brick Lane, London.
6v18-3m

REGISTER YOUR LETTERS containing money addressed to us, or we can not be responsible. Remittances by Express must be in packages, prepaid. When practicable, it is best to remit by draft, or order, on some San Francisco bank or firm.

Metallurgy.

MOSHEIMER'S
PIONEER MINING SCHOOL,
—AND—
METALLURGIC WORKS.
Having established the first Practical Mining and Metallurgical School in the United States, I would call the attention of gentlemen who may wish to obtain a practical knowledge of
Chemistry, Assaying and Metallurgy,
That I am prepared to teach all the above branches in less time than in any European School.
I also undertake to assay and work any kind of ore, or mineral substances.
For terms, apply to **JOS. MOSHEIMER,**
Practical Chemist and Metallurgist.
Office, 328 Montgomery street; Metallurgic Works, 2005 Powell street, San Francisco. 6v18-6m

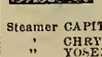
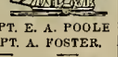
LEOPOLD KUH,
Assayer and Metallurgical Chemist,
(Formerly of the U. S. B. Mint, S. F.)
Office, No. 611 Commercial Street, opposite the Mint, San Francisco.
BULLION MELTED AND ASSAYED,
The correctness of which is guaranteed in every respect. All kinds of Ore and Mineral tested, assayed and analyzed in the most satisfactory manner.
Refers by permission to W. C. Ralston, Cashier Bank of California; Messrs Ploche & Bayerque, Wm. M. Lent, John D. Fry, E. Cahill & Co., A. K. Grim, President Pacific Union Express Co.; John M. Eckfeldt, M. and R. U. S. B. Mint. Halo & Norcross S. M. Co., and the principal mining companies on the Comstock Lode. 25v17-1f

R. TAYLOR. WM. H. TAYLOR.
ROBERT TAYLOR & CO.,
METALLURGISTS.
SMELTING WORKS,
Twelfth street, between Folsom and Howard.
GALVANIZING.
Also, Anti-Friction, Alloys for Journals, Type and Stamping Metals, Tinners and Plumbers' Solder, Etc.
☞The best price given for the most rebellious or refractory ores. Ores and minerals assayed and analyzed.
ISAAC BLUXOME, Agent,
4v18-3m N. E. cor. Washington and Battery streets.

G. W. STRONG,
ASSAYER AND WORKER OF ORES,
No. 10 Stevenson street, near First, San Francisco.
Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms.
14v16qr.

Wonderful Invention!—To Housekeepers!
NEW METHOD OF
WASHING CLOTHES
WITHOUT LABOR.
JOHN REIST'S Celebrated Patent Automatic
CLOTHES WASHER AND BOILER.

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S Patent Office, November 4, 1868.
See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco,
25v1 3m 67 and 69 Fourth st., bet. Mission and Jessie sts. Dealer in Stoves and Tinware.

California Steam Navigation

COMPANY.

Steamer CAPITAL..... .....CAPT. E. A. POOLE
" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE..... .....
" CORNELIA.....CAPT. W. BROMLEY
" JULIA.....CAPT. E. CONCKLIN.
Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.
Office of the Company, northeast corner of Front and Jackson streets.
B. M. HARTSHORNE,
13v12 President.

Office of California Powder Works.
San Francisco, July 15, 1869.
NOTICE.
On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.
Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.
JOHN P. LOHSE, Secretary.
5v19-3m **314** California street

Business Cards.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
4v16-3m

CARD PICTURES,
ONE DOLLAR PER DOZEN.
And Photographs, Ambrotypes and Sun Pearls, by first class artists, at the lowest rates,
At SILVA'S, 64 Third Street,
Northwest corner of Mission. - - - - - San Francisco.
11v18-3m

NATHANIEL GRAY. H. M. GRAY.
N. GRAY & CO.,
UNDERTAKERS,
641 Sacramento St., cor. Webb, San Francisco.
☞Sole Agents for Barstow's Metallic Burial Cases and Caskets.
25v14tf

Farmers and Mechanics
BANK OF SAVINGS,
No. 225 Sansome Street.
Interest paid on Deposits. Money Loaned on Real Estate.
H. DUTTON, President.
GEO. M. CONDEE Cashier. 19v16-3m

M. S. BUCKELEW. GEO. LAWS. R. GROOM.
BUCKELEW & CO.,
Importers and Jobbers of
Choice Teas, Groceries and Provisions,
520 Market street,
Below Montgomery street. 17v18-3m

W. T. ATWOOD,
PURCHASER OF
COPPER ORES, BARS, MATT Etc., Etc.,
505 Montgomery street, San Francisco.
The highest market price paid for ores assaying 10 per cent. and upwards 23v17qr

D. C. HALL & CO.,
WHOLESALE AND RETAIL
Ale, Porter, Wine and Liquor Merchants,
912 Market street, San Francisco.
☞City and country orders promptly attended to. Merchants, Shippers and Families supplied in large or small quantities. 3v19 3m

Farms and City Property.
C. H. WAKELEE & CO.,
601 California street, S. W. Corner Kearny street, buy and sell Farms and City Real Estate. Parties wishing to invest will find it to their interest to call on the . 13v18-3m

Pump Leather.
The attention of MINING COMPANIES, and others requiring a superior article for Hydraulic purposes, is invited to the heavy Oaked Tanned Pump Leather, manufactured and prepared expressly by the undersigned.
TRADE SANTA CRUZ TANNERY E. JONES & Co MARK.
Constantly on hand and for sale by
GRAY, JONES & CO.,
Depot of the Santa Cruz Tannery,
418 Battery St., San Francisco.
25v17-1y

For Miners, Millmen and Metallurgists.
KUSTEL'S NEW WORK,
CONCENTRATION
Of all kinds of Ores, and the
CHLORINATION PROCESS,
For Gold-Bearing Sulphurets, Arsenurets, and Gold and Silver Ores generally.
Price, - - - - - $7.50
A liberal discount to the Trade. For sale by the Booksellers
Sent to any part of the United States, postage paid, on receipt of the price. Address,
DEWEY & CO., Publishers,
Office of the Mining and Scientific Press, 414 Clay street
16v1tf SAN FRANCISCO.

Mining Secretary.
THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.
Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.
J. M. BUFFINGTON,
Room 37 New Merchants' Exchange, California street, San Francisco 17v15-1f

Trades and Manufactures.

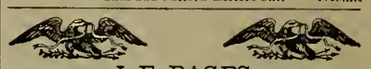
WM. BARTLING. HENRY KIMBALL.
BARTLING & KIMBALL,
BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers,
505 Clay street, (southwest cor. Sansome),
15v12-3m SAN FRANCISCO.

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
S. E. Corner of Mission and Fremont sts.,
6v14tf SAN FRANCISCO

SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
24v18-1m

J. J. JONES,
CARPENTER and BUILDER,
No. 324 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
7v18tf

W. C. CAMPBELL,
PATTERN AND MODEL MAKER,
No. 20 Fremont street, over Phœnix Iron Works, San Francisco.
Particular attention given to MODELS for the Patent Office Brands and Pattern Letters Cut. 4v18mtf


J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, **608** Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

DESKS AND OFFICE FURNITURE.
JOHNSON & BEST,
Manufacturers of all kinds of
Desks and Office Furniture,
717 Market street, near Third, up Stairs.
Warerooms, 413 Pine street, Russ Block,
A large variety of Desks always on hand; all kinds of Office Furniture and Cabinet Work made to order.
18v17qr

Pacific Chemical Works.
SULPHURIC ETHER.
SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS,
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

THE GIANT
POWDER COMPANY
Is now prepared to fill all orders for
GIANT POWDER,
Put up in Boxes, either in Bulk or in Car tridges.
General Agents,
BANDMANN, NIELSEN & CO.,
25v16-3m 210 Front street, San Francisco.

WINDMILL
For Sale Cheap!
Entirely New and of Modern and Approved Style.
For particulars apply to or address this office.

To Quartz Mining Companies.
To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—
One Steam Engine, 60 horse power, made by Burden, Brooklyn, New York.
Two large Rollers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift-Pump, 6 inches, of superior make and finish.
280 feet of 5 inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.
The Company having ceased operations intend selling off their effects as speedily as possible.
For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or E. W. HASKELL, Pacific Fruit Market, San Francisco. 24v18-1m

Delays are Dangerous.—Inventors on the Pacific Coast should bear in mind that by patronizing our Patent Agency they can sign all necessary papers for securing patents almost immediately, thereby avoiding months of delay requisite in transacting business through Eastern agencies.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

For the Week Ending July 27th.

Gang-Plow.—Laban Holloway, San Francisco, Cal.—92,968.

Method of Extracting Iron and Other Oxides from Clay, Porcelain-Earth, etc.—William John Lynd, Golden City, Colorado Territory.—92,981.

Scraper.—Hon. T. G. Phelps, Belmont, San Mateo county, Cal.—93,000.

Method of Manufacturing Vinegar.—Francis Schleifer, San Francisco, Cal., assignor to himself and Francis Cutting. Antedated July 16, 1869.—93,012.

Velocipede.—David R. Smith, San Francisco, Cal., assignor to himself and Norbert Landry.—93,016.

Sawing Machine.—George W. Benson and Frank F. Doland, Sacramento, Cal.—93,043.

This invention relates to certain new and useful improvements in portable cross-cut sawing machines, whereby the saw is fed automatically to the wood to be cut, so that the amount of feed required will be given at each stroke of the saw, regularly and evenly, without any extra exertion of the operator. It consists in placing the saw in a slide, which moves back and forward in ways. Directly above the slide is placed a box, which moves up and down with the slide. A spring extends out over the saw, its opposite end being secured to the block, so that the end of the spring is always pressing down upon the saw, the block being carried downward as the saw is fed to the wood, and consequently keeping the spring, at all times, hearing upon the saw. By this means a wood-sawing machine is provided which can be moved from place to place, as desired, as it can be made very light. A man or boy can operate it with ease, and it can he easily arranged to be run hy any convenient power, if desired, after it is once placed in position.

Sluice and Concentrator.—Ezra Coleman, San Francisco, Cal., assignor to self and Dr. A. F. Cooper.—93,060.

The object of this invention is to provide an improved arrangement of metal-saving and sulphuret-concentrating devices, by means of which not only the heavy particles of gold, amalgam and quicksilver are saved, but also that portion of the amalgam and precious metals in the condition of what is generally called "float-gold," nearly the whole of which is lost by any of the modes of saving the precious metals now in use. The device consists of an arrangement of gradnated concentrating troughs, into which the pulp is precipitated after the free metal and amalgam have been extracted, and by means of which the sulphurets are concentrated. The special device for saving this portion of the gold consists in the employment of a blanket just the width of the sluice, one end of which is attached to the upper end of the same, and at a height just sufficient to allow the stream of water to pass heneath it. This blanket exteuds loosely the whole length of the sluice, so that when the stream of water is passing through, the hlauket will sweep the surface and take up snch fine particles of gold as may be floating on or near the top. This is reversing the ordinary uses of the blanket, which has heretofore been employed only at the bottom of the sluice. By this device they may be employed at both top and hottom, and may be extended to any length which may be required, or as far as any economical saving of gold can be made.

Gang-Plow. — Charles F. Gay, Albany, Oregon.—93,077.

Petroleum Burner.—E. P. McCarthy, San Francisco, Cal.—93,105.

This invention constitutes a device for the combustion of petroleum or other hydro-carbons for making steam or for other purposes. By its use ordinary wet steam from the boiler is passed from a jet-tube through a peculiarly-shaped pipe, in such a manner as to carry with it a large body of air, mixed with the steam during its passage. The oil to be burned is conveyed into this pipe at a point where it will fall into the blast of mixed steam and air in such a mauner that it is instantly converted into a fine spray, in which condition it enters the furnace, where it is burned with the aid of steam and air. The great difficulty encountered in burning hydro-carbons for steam purposes has been found in the use of retorts, which have generally heretofore been considered necessary for such combustion. This device entirely does away with all necessity for the use of retorts, while a most perfect combustion is effected. The device is extremely cheap and simple, and is readily adjustable to any furnace. In addition to its use for making steam, it is thought to be eminently practicable for cupolas and puddling furnaces. We shall probably soon give an illustrated description of this new and important invention.

Process of Purifying and Refining Alcoholic Liquids.—Francis Schleifer, San Francisco, Cal., assignor to himself and Francis Cutting, same place.—93,127.

Shingle Machine.—G. F. White, Aurora, Oregon.—93,148.

New Incorporations.

Moneta S. M. Co.—White Pine. August 2. Capital stock, $1,440,000; 28,800 shares, $50 each: Trustees: S. H. Roberts, B. R. Freeland and L. J. Lewis.

Hamilton Hydraulic M. & T. Co.—White Pine. August 2. Capital stock, $800,000; 8,000 shares, $100 each. Trustees: J. W. Jones, John [C. Doherty and Michael T. Brewer.

Ida Elmore M. Co.—Idaho Territory. August 2. Capital stock, $1,000,000; 10,000 shares, $100 each. Trustees: D. H. Fogus, John M. Wilson, T. J. Bowers, L. W. Greenwell and M. G. Gillette.

Sacramento Valley Reclamation Co. Yolo and Colusa counties. August 2. Capital stock, $1,000,000; 10,000 shares, $100 each, Trustees: Wm. Blanding, Louis A. Garnett, Robert F. Morrow, A. H. Rose and John Hewston, Jr.

Meetings, Elections, Etc.

Maxwell Mining Co.—Trustees: E. D. Keyes (President), D. A. Colton, J. A. Steinberger, Geo. Wallace, D. J. Williamson (Secretary).]

John Hancock M. Co.—Election July 26. Trustees: Jas. H. Gager, A. C. Bonnell, George I. Foster, John Hancock, W. W. Merihew, H. W. Jones and W. K. Dietrick. President, John Hancock; Treasurer, W. K. Dietrick; Secretary, H. W. Jones.

Celtic and Teutonic Farm Association.—Election August 2. Trustees: F. S. Wensinger, M. Flood, H. Hinders, M. Meagher, G. Groezinger, M. Guerin, J. Schreiber, C. Zinns, H. Cordes, G. F. Walter, C. F. Schulze and J. Dunn. President, Henry Brickwedel; Vice Presidents, J. A. McGlynn and John G. Downey; Treasurers, R. Sherwood and H. Schwarze; Secretaries, F. X. Kast and J. T. Barry; Auditors, J. P. Schmitz and J. R. Kelly.

North Pacific Transportation Co.—Election July 31. Trustees: Ben Holladay, Wm. Norris, Lloyd Tevis, A. Hayward, S. F. Butterworth, W. C. Ralston, and W. F. Babcock. President, Ben Holladay; Vice President, Wm. Norris; Secretary, C. J. Brenham.

Olympic Club Building Association. Election August 4. Directors: John McComb, Richard Carroll, T. R. Butler. D. A. Carpenter, Fred. A. Elliott, Peter Taylor, Camillo Martin, J. W. Brown, W. T. Atwood.

Mission St. Extension Homestead Association.—Election August 3. Trustees: C. Meyer, B. Morris, Dr. D. Cohn, Philip Falk, N. Rhine, M. Greenberg, Dr. J. Regensburger, Isaiah Cohn, August Helbing, Isidor Gutte, Saul Marks and S. Meyer.

Concordia Homestead Association.—Election August 4. President, J. D. P. Teller; Secretary, Louis Kaplan; Treasurer, S. B. Watson; Trustees, S. B. Collins and Henry Schwartz.

Ben Franklin Homestead Association. Election August 4. President, Gustavus Wetzler; Secretary, Louis Kaplan; Treasurer, Gustavus Sturzineger; Trustees, J. Bruner and H. Winkle.

Those spectacles advertised "Lost," for which a very large reward was offered, were purchased at Muller's, 205 Montgomery street. ***

Continental Life Insurance Company, 302 Montgomery street, corner of Pine. *

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the Mining and Scientific Press and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alpha Cons, Storey co., Nev., June 5. $5	July 10	July 31
Alleghany Cons., Sierra co., Aug. 6, 50c	Sept. 7	Sept. 23
Bowden, White Pine, June 26, 10c	Aug. 5	Aug, 23
Bucklin, White Pine, July 14, 5c	Aug. 20	Sept. 10
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Brodt, White Pine, June 23, 25c	July 29	Sept. 4
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Central, Storey co , Nev., June 23. $2.50	July 24	Aug 14
Cosala, Mexico, June 19, $1.25	July 24	Aug. 31
Germania, White Pine, July 13, 20c	Aug. 13	Aug. 26
Cherokee Flat, Butte co., June 28, $5	Aug, 3	Aug. 18
Chester, White Pine, June 29, 15c	Aug. 4	Aug. 25
Chipionera, Sonora, Mex., July 26. $2.50	Aug. 26	Sept. 11
Cuba Cons., White Pine, June 24, 6c	July 24	Aug. 10
Cayuga Chief, White Pine, June 23, 10c	July 30	Aug. 19
Cordillera, Mexico, July 23, $1	Aug. 24	Sept. 8*
Central No. 2. Storey co., July 14. $6	Aug 16	Sept. 4
Daney, Lyon co., Nev., Aug. 5, $1	Sept. 5	Sept. 28
Daniel Webster, White Pine, June 30, 15c	July 30	Aug. 19*
Evening Star, White Pine, June 25, 10c	July 31	Aug. 21*
French, White Pine, July 19, 5c	Aug. 24	Sept. 13*
Gold Hill Q., Storey co., June 29, $4	Aug 2	Aug. 23
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 30*
Germania, White Pine, July 13	Aug. 13	Aug. 26
Hercules, White Pine, July 10, 20c	Aug 12	Aug. 27
Hidden Treasure Cons., June 29, 50c	Aug. 4	Aug. 25
Hidden Treasure, White Pine, June 28, 50c	Aug. 4	Aug. 25
Hope Gravel, Nevada co , June 29, $1	Aug. 7	Aug. 23
Hornet, White Pine, July 24, 10c	Sept. 8	Sept 20*
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 24
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Julia, Storey co., Nev., Aug. 4, 75c	Sept. 7	Sept. 25
Kincaid, Tuolumne co., Aug. 4, $2 50	Sept. 8	Sept. 25*
Kentuck, Storey co., Nev., Aug. 5, $1	Sept. 6	Sept. 25
Lucky Ledge, White Pine, July 15. 10c	Aug. 16	Sept 6
Lyon M. & M., El Dorado co , July 21, $2.	Aug. 30	Sept. 20*
Mammoth, White Pine, July 16. 50c	Aug. 23	Sept. 13
Mazeppa, White Pine, June 30, 10c	Aug. 5	Sept. 11
Magenta, White Pine, June 23, 10c	July 29	Sept .4
Mahogany, White Pine, June 17. 10c	July 23	Aug. 13
Mammoth Cave, White Pine, July 12, 10c.	Aug. 18	Sept. 23
Morning Star, Alpine co., July 21, $1.50.	Aug. 31	Sept. 18*
Marlborough, White Pine, July 19, 5c	Aug. 24	Sept. 13*
Noonday, White Pine, June 14, 30c	July 19	Aug. 9
Ophir, Storey co. Nev., July 23, $3	Aug. 23	Sept. 16
Oriental, Sierra co., July 21, $5	Aug. 21	Sept. 6
Pocotillo, White Pine, Aug. 2, $2	Sept. 6	Sept. 27
Phœnix, White Pine, July 12, 15c	Aug. 12	Sept. 30
Rathbun, White Pine, June 22, $1	Aug. 27	Aug. 14
Segregated Belcher, Storey co., Aug. 5, $1.	Sept. 9	Sept. 29
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug. 28
Silver Eagle, White Pine, July 14, 25c	Aug. 16	Sept. 6
Silver Sprout, Inyo co., July 27. 50c	Aug. 31	Sept 20*
Tecumseh, Calaveras co., July 22, $7.50	Aug. 24	Sept. 15
Treasure Trove, White Pine, July 27, 20c.	Aug. 30	Sept. 18
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Aug. 30*
Virginia, White Pine, June 17, $1.25	July 26	Aug. 11
Virginia, No 2 White Pine, July 21, 25c	Aug. 28	Sept. 11
White Pine Water, June 23, $50	July 25	Aug. 16
Willimantic, White Pine, May 20, 20c	July 19	Aug. 10*
West California, White Pine, July 10, 10c	Aug. 17	Sept. 25
Yosemite, Humboldt co., Nev., July 2, 30c.	Aug. 7	Aug. 24*
Yellow Jacket, Storey co., Nev., July 19, $10	Aug. 18	Sept. 17

MEETINGS TO BE HELD.

Meadow Valley, Lincoln co., Nev..Annual Meeting Aug. 19
Senator, Storey co., Nev. Annual Meeting Aug. 25*

LATEST DIVIDEND.

Amador Co., div. $8 per share ..... Payable August 7, 1869
Alpha Cons., Storey co., Nev , div. $2.... Pay. June 19, 1868
Bacon, Storey co., Nev., div..... Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.... May 10, 1869
Crown Point, dividend, $7.50..... Payable Sept. 12, 1868
Del Par Potosi, div., $2..... Payable August 3, 1869
Eureka, div. $5..... Payable July 10, 1869
Empire M. & M., Nev., dividend $6. ...Payable May 15, 1867
Gould & Curry, div., $7.50..... Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50... Payable July 15, 1868
Golden Chariot, Idaho, div., $3..... Payable June 15, 1869
Golden Rule, Tuolumne co, div. 50c per sh.. Pay. June 26, 1869
Hale & Norcross, div. $6..... Payable July 10, 1869
Imperial, Storey co , Nev., div..... Payable June 20, 1868
Industry, White Pine, div., $1..... Payable July 1, 1869
Keystone, Sierra co., div., $12..... Payable May 6, 1869
Kentuck, div., $20 per share..... Payable Jan. 10, 1869
North Star, dividend, $5..... Payable Aug. 15, 1868
Occidental, div. $2..... Payable March 2, 1869
Pacific Unassessable, div. $2..... Payable June 18, 1868
Sand Spring Salt, dividend $1..... Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50... Payable Dec. 19, 1868
Savage, Virginia, Nev., dividend, $4... Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1..... Payable May 3, 1869
Sierra Nev., Storey co., Nev., div. 50c... Pay. August 10, 1869
Virginia & G. H. Water Co.. Dividend, payable April 16, 1869
Yellow Jacket, div., $5..... Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. Stock and Exchange Board

Friday Evening, August 6, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5 20s, 1862	88	89
Legal Tender Notes	71½	74
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	—	par & int.
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858.	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par	& int.
San Francisco City and Co. Sch'l Bds, 7s, 1866.	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863.	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864.	89	90
Sacramento City Bonds	55	60
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds	89	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	66	—
Spring Valley Water Co	61½	62
State Telegraph Co	25	—
GAS COMPANIES.		
San Francisco Gas Co	84	—
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
San Francisco and San Jose Railroad	—	—
Omnibus Railroad	66	70
Central Railroad	50	—
North Beach and Mission Railroad	—	70
Front Street, Mission and Ocean Railroad	11	12
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	150	160
INSURANCE COMPANIES.		
People's Insurance Company	90	95
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	110	—
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	91
MINING STOCKS—WASHOE DISTRICT.		
Alpha	18¼	18¾
Baltimore American	—	—
Belcher	20	—
Bullion, G. H	—	10
Crown Point	30	—
Gole (Va.)	—	—
Confidence	—	—
Consolidated Virginia	—	9
Chollar-Potosi	19¼	19¾
Daney	1¾	2
Exchequer	5	8
Empire Mill and Mining Co	—	50
Gould & Curry	100	101
Gold Hill Quartz	—	60
Hale & Norcross	103½	104
Imperial	50	—
Julia	1¼	2
Justice and Independent	5	8
Kentuck	182	185
Lady Bryan	30	—
American	28	28¾
Occidental	15	—
Ophir	18	18¾
Overman	69	69½
Segregated Belcher	9¾	9¾
Savage	76	—
Sierra Nevada	9¾	10
Union	—	—
United States	—	—
Yellow Jacket	43½	44
MISCELLANEOUS MINING STOCKS.		
Amador (California)	280	282
Amora, White Pine	7	10
Eureka, (California)	210	220
Golden Chariot (Idaho)	30	35
Silver Cord (Idaho)	4	—
Golden Rule, California	—	—
Mohawk (California)	—	—
Pocotillo, White Pine	1	1¼

San Francisco Market Rates.

Wholesale Prices.

Friday, August 6, 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 37½
Do. Superfine	4 50	@	4 75
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 40	@	1 75
Oats, ₱ 100 lbs	1 50	@	1 75
Barley, ₱ 100 lbs	1 15	@	1 35
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	1 05
Hay, ₱ ton	10 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14½	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	20
Do. Rio	—	@	19
Tea, Japan, ₱ lb	76	@	90
Do. Orcen	60	@	1 25
Hawaiian Rice, ₱ lb	9¾	@	10
China Rice, ₱ lb	5¾	@	6¾
Coal Oil, ₱ gallon	45	@	46
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	40	@	55
Isthmus Butter, ₱ lb	30	@	35
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	50	@	55
Lard, ₱ lb	16	@	17
Ham and Bacon, ₱ lb	14	@	16
Shoulders, ₱ lb	8	@	9

Retail Prices.

Butter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	30	@	40
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ Dozen	60	@	70
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1¼	@	2
Potatoes, sweet, ₱ lb	4	@	5
Tomatoes, ₱ lb	5	@	—
Onions, ₱ lb	5	@	8
Apples, No. 1, ₱ lb	4	@	5
Pears, ₱ lb	5	@	6
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	18
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	50	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O	7	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Friday, August 6, 1869.

Iron.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1¼@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1½c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2¼c ₱ lb.			
Scotch and English Pig Iron ₱ ton	$35 00	@	$38 00
White Pig ₱ ton	34 00	@	35 00
Refined Bar, bnd assortment ₱ lb	— 03	@	—
Refined Bar, good assortment, ₱ lb	— 04	@	—
Boiler, No. 1 to 4	— 04¾	@	—
Plate, No. 5 to 9	— —	@	— 04¾
Sheet, No. 10 to 13	— 04½	@	— 5
Sheet, No. 14 to 20	— 05	@	— 05¾
Sheet, No. 24 to 27	— 05	@	— 6¾
Copper.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb			
Sheathing, ₱ lb	— —	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22
Tin Plates.—Duty: 25 ₱ cent. ad valorem.			
Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— —	@	— 35
Steel.—English Cast Steel, ₱ lb	— —	@	— 15
Quicksilver.—₱ lb	— 55	@	— 60
Lead.—Pig, ₱ lb	— 7¾	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
Zinc.—Sheets, ₱ lb	— 10¾	@	— 11
Borax.—California, ₱ lb	— 38	@	— 40

Price, 25 cents, Postage Paid.

A PAMPHLET,

JUST PUBLISHED ON THE

TREATMENT OF REBELLIOUS SILVER ORES

—BY—

AMALGAMATION WITHOUT ROASTING

BY CHAS. H. AARON,

Assayer and Metallurgical Chemist.

This Pamphlet contains 8 pages of concisely written matter, by a practical working Metallurgist.

Published by DEWEY & CO.,

Publishers and Patent Agents, Mining and Scientific Press Office, 414 Clay street.

The Trade Supplied at Wholesale Rates.

1v19-lamtf

To News Agents.

From July 1st, 1869, News Agents desiring five or more copies weekly of the Mining and Scientific Press, will be furnished direct from the office, at a reduced price from former rates. Orders for a less number can best be supplied through San Francisco wholesale agents.

RETURNED.—Dr J. H. Pinno, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, OR Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 23 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18 3m

Asiatic Cholera.—The Strongest Proof of Intrinsic Merit.—DEAR SIR: I ought to have acknowledged long ago the box of Pain Killer you had the goodness to send me. Its coming was most providential. I believe hundred of lives were saved, under God, by it. The Cholera appeared here soon after we received it. We resorted at once to the PAIN KILLER, using as directed for Cholera. A list was kept of all to whom the Pain Killer was given, and our native assistants assured us that eight out of every ten to whom it was prescribed recovered. It has proved an incalculable blessing to multitudes of poor people throughout all this region. Our native preachers are never willing to go out on their excursions without a supply of the PAIN KILLER. It gives them favor in the eyes of the people, and access to families by whom otherwise they would be very indifferently received. Relieve me, gratefully and faithfully yours, J. M. JOHNSON,
Missionary, Swatow, China.

The Pain Killer is sold by all Druggists and dealers in Family Medicines.
REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents. aulu

From an Editor.

"TIDAL WAVE" OFFICE, SILVER CITY, }
IDAHO TERRITORY, July 27th, 1869. }

MESSRS. DEWEY & CO.—GENTLEMEN:—Allow me to express my high appreciation of the ability and business management of the Mining and Scientific Press Patent Agency, and to say that our business relations have been marked with the utmost promptitude upon your part and with entire satisfaction upon mine.

Yours, etc., JNO. S. BUTLER.

New Advertisements.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.

THOMAS MOONEY, President.
August 2, 1869. 6v19-1m

To all who use Planes.

The superiority of Iron Planes over those made of wood, for durability and accuracy, is no longer a question and the objections of high price, extra weight, and "sticking" to the wood, of those formerly introduced, are now overcome by the PALMER'S PATENT.

Some of its Peculiarities—The Throat is adjustable, and can, in an instant, be made very fine, or very coarse. The Bit is set for the work to be done, by simply moving a lever. The Bit is squared with the face of the plane, by another lever. Both of these movements are instantly and easily made by the fingers, without loosening the bit. The Bit is fastened by a toggle-joint, and can be put in and taken out "as quick as wink." The Bit is firmly bedded, at its heel, close to the bevel, on exact, brass bearing, and when the toggle joint is closed, it is tightly pressed upon them, and never trembles. It is, therefore, just the Plane for hard woods, the ends of wood, etc.

What it will do—It works very easily, and is just the thing for fine work of every kind, and for tough "catty" timber, which it smoothes perfectly. On the ends of wood, hard or soft, it works peculiarly well. Try it.

Several Planes in one.—The Jack-Plane, for instance, is at once a Smooth, a Jack and a Fore Plane, and for mitres, is also a Block-Plane, and, in an instant, can be changed to either. In fitting Sash, Doors, Blinds, etc., it is the only Plane required. Three of our Planes do the full work of four wooden Planes, and thus save chest room and luggage.

It Works Hard Wood Perfectly—Here its accuracy and nice adjustments come into full use, and no other Plane can compare with it.

Agents Wanted to take orders for these Planes. Call and examine them and learn full particulars, at the CALIFORNIA WIRE WORKS of
6v19f H. T. GRAVES, No. 412 Clay street.

HIBBERD, SANBORN & CO.,

STAIR BUILDERS.

South Point Mills, Berry Street,

Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Tea Pins. Fancy Newels and Balusters.
6v19-3m

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

—AND ALSO IN—

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to C. J. Kinney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

GAS! GAS! GAS!

MACHINES!

THIS MACHINE,

MANUFACTURED BY THE

Boston Union Gas Company,

Is the result of several years of experiment and investigation, until to sum the whole, we can warrant a perfect machine.

It is Simple in its Action

AND THOROUGH IN ITS CONSTRUCTION.

It will last a lifetime; requires not more than three minutes's attention a day, to wind up the weight; generates gas just as fast as it is wanted, and stops making the moment you stop using it; gives the

Cheapest, Softest, and Most Diffusive Light

yet discovered. It will make abundant gas from a cheaper and lower grade of fluid than

ANY OTHER MACHINE IN USE,

and works in cold climates as well as warm. Only those who have used Gas Machines knew what this means. Complete or partial failure in cold weather has destroyed confidence in them more than all other causes combined.

The Union Gas Machine entirely obviates this difficulty by a simple contrivance, patented and owned exclusively by this Company, and by which we warrant each and every Machine to operate successfully in winter or summer in any climate or country. It is the only Machine that claims to work outdoors in cold climates, and the only one that fulfills the requirements of the insurance companies without increase of risk. For country residences you save the breakage of lamps, and your lights are always clean. Away from the city, a Gas Machine affords one of the most pleasant and valued of city comforts. Of the advantages of Gas Machines, you pay for no more Gas than you actually consume. People sometimes imagine they do this with a machine. It is impossible; and the same amount of light will not cost one-half the cost of coal gas, besides being much more brilliant.

Where the pipe is already in the building according to the regulations required by the coal gas companies, or where parties wish the entire work of piping fixtures and furnishing, Machine, etc., by us, we will do everything and warrant everything.

The following card from Mr. Atkinson, 538 Market street, who has been THE FIRST TO INTRODUCE this light in this city, will be read with interest:

SAN FRANCISCO, January 25th, 1869.

MESSRS. D. SIMPSON & Co., Agents of the Pacific Union Gas Company, 117 Sutter street—Dear Sirs: I have for the past two months been using the light produced by the "BOSTON UNION GAS CO'S GASOMETER," now for sale by the PACIFIC UNION GAS COMPANY, and am well satisfied to continue using it. I find that it is equally safe as city gas, more brilliant, and less injurious to the eyes. I formerly paid to the Gas Company fully **100** PER CENT. MORE than it now costs me to light my premises. Any persons who may wish to introduce this Light can call at my store, No. 538 Market street, and I will satisfy them as to its economy and merits. JAMES ATKINSON.

ADDITIONAL REFERENCES

Given on application to

D. SIMPSON & CO.,

117 Sutter Street, San Francisco,

Agents for the Pacific Coast.

And we cordially extend an invitation to all owners or agents of other

Patent Gas Machines

To secure a place at the next MECHANICS' FAIR, where the public can have an opportunity of

INSPECTING AND TESTING

The relative merits of all the Gas Machines on this coast.

1v19-1am3m **D. SIMPSON.**

Pacific Mail Steamship Co's

STEAMSHIPS FOR

NEW YORK, JAPAN AND CHINA.

LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at **11** o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.

On the **10th, 17th** and **30th** of each month that has **30** days.

On the **10th, 18th** and **30th** of each month that has **31** days.

When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding; when the 17th falls on Sunday, they will leave on the Monday following.

Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.

Departure of the 17th or 18th is expected to connect with the French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America. Through tickets can be obtained.

The following Steamships will be dispatched on dates as given below:

August 9th—SACRAMENTO.....Capt. W. H. Hudson, Connecting with ALASKA, Capt. Gray.

August 18th—GOLDEN CITY.....Capt. Wm. F. Lapidge, Connecting with HENRY CHAUNCEY, Capt. Cannor.

August 30th—MONTANA..... Capt E. S. Farnsworth, Connecting with ARIZONA, Capt. Maury.

Passengers berthed through. Baggage checked through. One hundred pounds allowed each adult.

An experienced Surgeon on board. Medicine and attendance free.

These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.

Through Tickets to Liverpool by the "Inman" and "National" Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco, where may also be obtained orders for passage from Liverpool or Southampton to San Francisco, either via New York or St. Thomas—if desired an amount of $100 to $200 will be advanced with the above orders. Holders of orders will be required to identify themselves to the Agents in England.

For Merchandise and Freight to New York and Way Ports, Company's Form of Bill Lading only used.

No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.

The Steamship JAPAN, Captain J. H. Freeman, will be dispatched for YOKOHAMA and HONGKONG on SATURDAY, September 4th, 1869, at noon connecting at YOKOHAMA with the steamer NEW YORK for SHANGHAI. Shippers of freight to China or Japan are requested to mark on each package its destination.

For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Saeramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.

New Mining Advertisements.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of August, 1869, an assessment of fifty (50c) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventh day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-third day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. au7

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of August, 1869, an assessment of two dollars and fifty cents ($2.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco. Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-fifth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary.
Office, 220 Clay street, San Francisco, Cal. au7

Office Senator Silver Mining Company.—Location of Mine: Storey County, State of Nevada.

NOTICE.—The Annual Meeting of the stockholders of the Senator Silver Mining Company will be held on WEDNESDAY, the twenty-fifth day of August, 1869, at one o'clock P. M., at the office of the Company, No. 408 California street, for the purpose of electing a Board of Trustees to serve for the ensuing year, and for the transaction of such other business as may properly come before the meeting.

T. B. WINOARD, Secretary.
San Francisco, August 6th, 1869. au7

Yosemite Mining Company, Humboldt County, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the second (2d) day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W N Wade....	148	315	$157 50

And in accordance with law, and an order of the Board of Trustees, made on the second (2d) day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. S. L. Jones & Co., auctioneers, 207 and 209 California street, on Tuesday, the twenty-fourth day of August, 1869, at the hour of 1½ o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. H. CROWE, Secretary *pro tem.*
Office, No. 220 Clay street, San Francisco. au6

Mining Notices—Continued.

Cordillera Gold and Silver Mining Company,— Morelos District, Chihuahua, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of July, 1869, an assessment of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 321 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY R. REED, Secretary.
Office, 321 Washington street, San Francisco. jy21

Daniel Webster Silver Mining Company.—Location af Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco, Cal. jy3

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Friday, the twenty-seventh day of August, 1869, and the sale thereof until Thursday, the sixteenth day of September, 1869. By order of the Board of Trustees.

jy31 O. D. SQUIRE, Secretary.

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five (5c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No 502 Montgomery street, Room No. 3, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DUPRAT, Secretary.
Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy27

George Washington Silver Mining Company. White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of ten cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twelfth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth (30th) day of August, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.
Office, Stevenson Building, San Francisco. jy10

Hornet Silver Mining Company.—Location of Works: White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of July, 1869, an assessment of ten (10c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth (8th) day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the thirtieth (30th) day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. S. MARTIN, Secretary.
Office, No. 11 Hayward's Building, 419 California street, San Francisco. jy31

Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty first day of July, 1869, an assessment of two dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the thirtieth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, Room 37 New Merchants' Exchange, California street, San Francisco. jy24

Marlborough Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada,

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DUPRAT, Secretary.
Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy24

Silver Sprout Mining Company.—Location of Works and Mines: Kernsarge District, Inyo county, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINOARD, Secretary.
Office, 408 California street, San Francisco. jy31

Thunderbolt Mill and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of July, 1869, an assessment of five cents per share (or $1 per foot), was levied upon the capital stock of said Company, payable on the tenth day of July, 1869, in United States gold coin, to the Secretary, at the office of the Company, No. 10 Stevenson Building, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twelfth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirtieth (30th) day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.
Office, Stevenson Building, San Francisco, Cal. jy10

Coal Tar as a Wood Preservative.

Dr. Adolph Ott gives in the *Scientific American*, some experiments which were undertaken by M. Rottier, Professor of Chemistry at the University in Ghent, Belgium, in order to determine what ingredients of coal tar are most effectual in protecting wood from rot. Rottier's experiments extend over the following constituents of coal tar: 1, The light oil; 2, the oil containing phenic or carbolic acid; 3, the oil containing aniline; 4, the naphthalized oils; 5, the solid residue; 6, the green fluorescent oil distilling between 275 and 320 Centigrade, containing pyren and paranaphthalin.

The light oil was found to be of no avail, for the wood treated with it decayed within the same period of time as wood that was not treated at all. The delay in decomposition produced by aniline oil amounted only to 6·66 per cent.

Prof. Ott says: "It is well-known that carbolic acid affords an excellent means for preserving animal matter from putrefaction. This fact has led to the conclusion that the heavy tar oils would be as excellent for preserving wood, they being the chemist's source for carbolic acid. Rottier found this not confirmed. Decomposition set in after the usual time, whether the acid was employed in solution, in benzine, or otherwise. Tar oils which contained not a trace of carbolic acid proved to be just as ineffectual as oil to which a considerable portion of the acid had been added. Naphthalin has proved to be very powerful in protecting collections of natural objects against the ravages of insects. It might, therefore, appear that it was the proper agent for preserving wood. This is not the case, it being too volatile to be adapted for the purpose in question where time and external agencies play such an important part. However, quite favorable results were obtained with the greenish fluorescent oil that comes over at the last stage of the distillation. Direct trials with pyren and paranaphthalin did not yield successful results. It must, therefore, be concluded that it is the green fluorescent oil to which the preserving action of coal tar must be attributed. "Is the same contained in sufficient quantities in the latter to justify its employment for preservative properties?" I am inclined to answer this question in the negative rather than in the affirmative."

Manufacture of Iron Pipe.

We find the following description of the manner in which iron gas and water pipes are made, in *Once a Month:* "A hollow spindle, or tube, the length of the pipe required, is covered with a rope composed of straw, and the latter covered evenly with loam about the consistency of mortar. This spindle is next placed in a drying oven, dried thoroughly and washed carefully with a composition which prevents the loam from adhering to the metal. At this stage it is termed the 'core,' around which the pipe is to be cast. A large iron flask, corresponding in length with the core, in the form of a cylinder, constructed in such a manner as to open and shut as a hinge is opened, is placed on end (the sides being held together firmly with clamps), an iron pattern corresponding in size with the diameter of the pipe inserted, and the intervening space filled with sand. The iron pattern or shaft is then withdrawn, the mold washed with the composition described, and the flask placed in a drying oven. When thoroughly dry, the flask is placed on end in a pit, the core placed exactly in the center, and the boiling metal poured in from the top, as in casting bells. If the metal were cast around a perfectly solid cylinder it would crack from end to end, or burst into fragments on cooling, from which it will be seen that the straw serves as a cushion which accommodates itself to the strain brought to bear upon it. When the metal has remained a sufficient length of time in the mold or flask, the latter is taken from the pit, the clamps removed, and the pipe turned out. The core is afterward pulled out, and the pipe is complete."

Six Days from Ocean to Ocean.—The Philadelphia *Bulletin* has the following: "A palace car full of passengers that left San Francisco less than a week ago arrived at New York this morning, thus traversing the whole continent in the short space of six days. Passengers who came in it may embark to-day for Europe, and arrive in Liverpool in nine days more, thus traversing the whole distance from the shores of California to the shores of England in fifteen days."

Machinists and Foundries.

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,
SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,
SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.
San Francisco, May 1, 1868. 18v16tf

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,
SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All Kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connexions of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. CALLAGHER. J. H. WEED V. KINOWELL.
9v13-1y

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco.

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.
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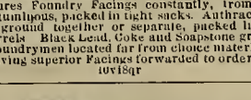

JAMES MACKEN,

COPPERSMITH,

226 Fremont st., bet. Howard & Folsom.

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.
13v11

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,
of every description, manufactured 24v16qr

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

6v16qr No. 23 Fremont street, San Francisco.

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral seams. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, height of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their Inventions. 1v16tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,
14v11 Sacramento City

THE RISDON

Iron and Locomotive Works.

Incorporated, April 30, 1868. Capital, $1,000,000.

Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.

Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Devoe, Dinsmore & Co., San Francisco.

Steam Engine Builders, Boiler Makers,

MACHINISTS AND FOUNDRYMEN.

All work in their line attended to with promptness and dispatch.

Directors:

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Lloyd Tevis, John N. Risdon,
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Ben. Holladay,

JOHN N. RISDON, President.

Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

Removal.

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel, Files,

Etc., Shear, Spring, German, Plow, Blister and Toe Calk Steel; manufacturers of

Mill Picks, Sledges, Hammers, Picks,

Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

Have removed to **13 and 15 Fremont street,** near Market, San Francisco.
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CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

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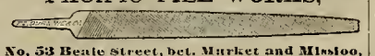
All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17-qy **J. WEICHHART, Proprietor.**

PACIFIC FILE WORKS,



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Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

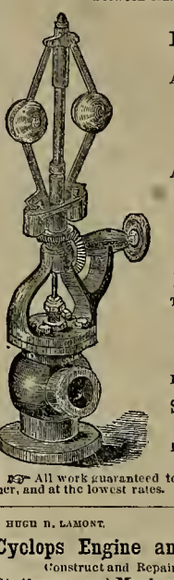
2v17-3m **T. G. DURNING & CO.**

BY MAIL.—The *Mining and Scientific Press* will be sent by mail to any part of the civilized world. In case of removal subscribers have only to inform us of the post office address of the old and new location, and the paper will be sent accordingly.

G. T. PRACY.

MACHINE WORKS,

NOS. 109 and 111 MISSION STREET,
Between Main and Spear.



New and second-hand

Engines and Boilers,

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Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

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Lathes, Drills,

And MILL MACHINERY of every description.

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New and Improved

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REGULATORS,

The best and cheapest yet invented—manufactured and for sale. Parties are invited to examine it in practical operation.

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Shingle Machines

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Particular attention paid to Repairing.

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Cyclops Engine and Machine Works,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

ap17-3m **113** Beale street, near Mission, S. F.

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Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.

Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the
1v17tf United States

GLASGOW

Iron and Metal Importing Company

Nos. 25 and 27 Fremont street,
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Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McGRINDLE Manage.

That will resist the extremes of heat and cold without liquefying or hardening.

It is therefore peculiarly adapted to the varied climate of this coast, especially localities where THE WEATHER BECOMES EXCESSIVELY HOT, causing oil and all other kinds of grease to run from the axle, retaining the proper position. It remains set until exhausted, leaving no deposit of GUM TAR OR PITCH. Its superior lubricating properties, durability and cheapness have been tried and approved by the CENTRAL PACIFIC AND OTHER RAILROADS, STAGE PROPRIETORS, STABLE KEEPERS, TEAMSTERS, CONTRACTORS, MILLMEN, FARMERS, and many others who prefer to

USE NONE BUT THE BEST.

It being prepared by a peculiar CHEMICAL COMBINATION OF OIL, previously freed from gum or other deleterious substances, it must be obvious that by its use friction will be reduced to the lowest point. We feel assured that all desiring A NO. 1 LUBRICATOR will give this the preference over any other Grease IN THE MARKET.

Sold by the Trade generally, and at the Factory, **109** Commercial street, San Francisco.

24v18-3m **PETTIT & CO.**

PATENT OFFICE REPORTS, from 1843 to 1847, MECHANICAL, are wanted for duplicate copies at this office. Parties having them for sale will please state price, and address DEWEY & CO., Mining and Scientific Press office San Francisco.

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, but one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

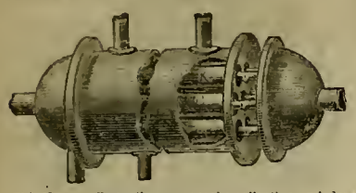
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, **220** Fremont street.

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

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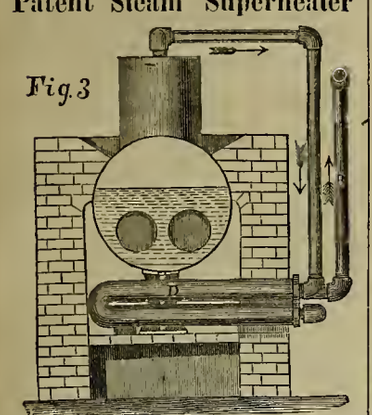

[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1860.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

"S perheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves 10 at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 25 per cent of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CROCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 23, 1867.

"Superheaters give entire satisfaction, and we super heat to 55 deg—an increase of 20 deg."

CARSEW MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

"Superheater saves at least 25 per cent in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming"

CONTRA COSTA LAUNDRY, Oakland, July, 1868

"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

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SIXTH MECHANICS' INST FAIR, S. F. Sept 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works better."

And many other letters of the same tenor.

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Awarded Silver Medal, American Institute, New York, 1865.

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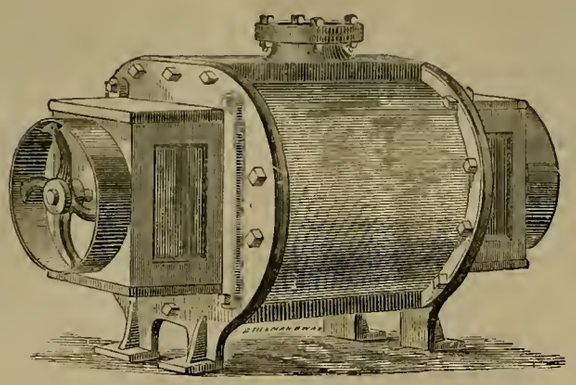
JOHN L. CONSTABLE, Engineer. 25v13tf

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

MANUFACTURED BY KEEP & BARGION,

At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition.



Patented Nov. 1st, 1864; July 21, 1868; and Oct. 6, 1868.

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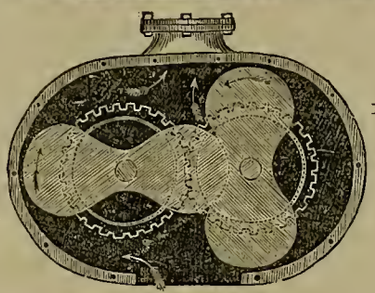

REQUIRES **Fifty Per Cent.** LESS POWER **Than any Blower** Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

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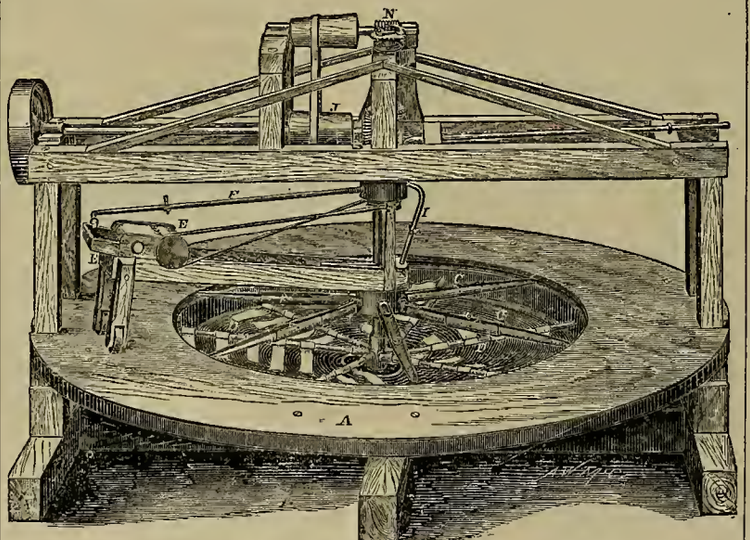
IMPROVED CONCENTRATOR,

For Saving Gold and Silver Sulphurets.



One Machine, costing about $1,300, is sufficient to work the Sands from 25 to 30 Stamps,

Less power being required than for any other Machine. The attention of quartz millmen throughout the State is directed to the subjoined certificates, and if they desire they can visit the Amador Mining Co's mill, near Sutter Creek, the Eureka Co's mill at Grass Valley, or the Banner Co's mill near Nevada, and see for themselves.

CERTIFCATES:

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WM. L. TISDALE, Supt. Star Spangled Banner Mine.

NEVADA CITY, Oct. 26, 1868.

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Having had large experience, and gratifying success with the great variety of cases emanating on this coast, we feel confidcnt of onr ahilities to assist inventors in patenting their inventions, saving them from vexatious delays, and from receiving worthless papers by reason of imperfect preparation of their claims before being scnt to tbe Patent Office.

In early days bnt little preparation was needed, or but ordinary skill requircd 10 obtain a patent; but now, hy reason of the multiplicity of inventions, and the numerous Acts of Congress, found necessary to protect the inventor while the patent lasts, and to do justice to the people after it expires, the utmost care and skill are requisite in managing cases and obtaining a patent that will be of real value to the Patentee, and stand the test of passing tbrough the legal ordeal of an infringement suit.

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In cases of immediate importance we can have tbeir progress reported by telegraph, so that applicants know immediately the result of the examination and decision of the Patent Office. We also make examinations by telegraph regarding the patentahility of inventions; examine patent assignments ou record at Washington; obtain copies of patents or claims, and also derive other information desired iustantly from the Pateut Office.

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Mineral Land Surveys.

Government surveyors, says the Amador *Ledger*, are now at work running off Amador county into townships, preparatory to sectionalizing and the further subdivision of sections. It is not known whether the object of this work is preparatory to bringing the mineral lands of that county into the market for sale, or for the purpose of protecting the timber from destruction. It is more than probable this step has been taken to answer the demands of settlers on the foot-hill lands, who are anxious to secure titles in view of the prospective value of such lands for agricultural purposes. It is characteristic of the American agriculturist to desire a title to the soil he cultivates; and settlers, as a general thing, will not make permanent improvements until such a title has been secured.

Our cotemporary truthfully says that the agricultural, horticultural and viniculturaI resources of the mountain counties are but little understood, even in some parts of our own State, and not understood at all outside of it; hence the want of thrift in those counties where mining has ceased to be the principal industry. But when the real value of the above named branches of industry in our mountain lands shall be generally known, and fair markets are opened up for our products, we shall not fail to receive our share of intelligent immigrants, seeking homes under the genial skies of California. Although the mountain counties are now depressed, and, after flooding the world with gold for twenty years, find themselves involved in debt and oppressive taxation, still they nevertheless have a future before them not wholly without brightness; and should the experiment of tea culture, now begun in a neighboring county, prove a success—as everything so far gives evidence that it will—then the mountain lands, with this addition to their sources of wealth, will at once become the most valuable of any on the Pacific slope.

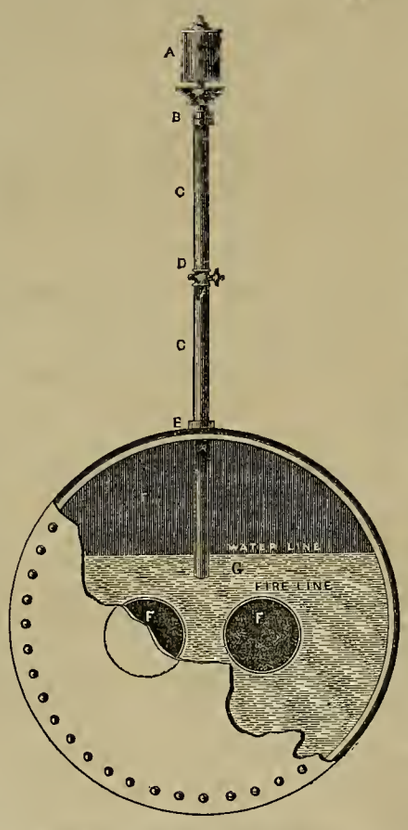
ANCIENT JERUSALEM.—Excavations now going on at Jerusalem, under direction of Lieutenant Warren, show that the ruins of ancient Jerusalem still exist beneath the modern town.

THE deepest sea sounding ever taken showed a depth of 6¾ miles.

Improved Low Water Detector.

Numerous devices have been brought forward for producing an automatic alarm to give warning when the water in a steam boiler reaches a position dangerously low; but we doubt if anything more effectual or simple than the one herewith illustrated has ever been devised. Its perfect simplicity will be seen at a glance. It may be attached to any part of a boiler, and it is almost impossible that it should fail to give the fullest warning the instant the water passes below the line fixed for "low water."

Referring to the engraving, A represents an alarm whistle; B, a coupling supplied



with an internal flange on which is placed a disk of fusible alloy, secured by the shank of the whistle being screwed down firmly on it; C, C, a tube (gas-pipe answers the purpose); D, a cock; E, a coupling by which the tube is attached to the boiler. The manner of connecting the detector to the boiler, whether tubular, flue or cylinder, is readily seen; the operation being simply to bore a hole at the point of connection, as shown in the cut, for the admission of the coupling, E, passing the pipe through till it reaches down to within one or two inches of the fire line, the portion of the pipe outside the boiler being from four to four and a half feet in length.

The operation of the instrument is as follows: After the boiler has been filled to the water line and steam raised, the pressure of the steam forces the water up into the tube. There being no circulation in the instrument so long as the lower end of the tube remains *under* water, that part of the column above the cock, D, will be of comparatively low temperature, and the disk will remain solid. But whenever the water in the boiler falls *below* the end of the tube the steam immediately displaces the water in it, and melts the fusible disk, and rushing out through the whistle gives notice that the water in the boiler is falling to a dangerous point. To replace a disk, unscrew the whistle, and fill that portion of the tube above the cock with cold water. Insert the disk, screw the whistle down hard enough to prevent leakage, and open the cock. When trouble may be apprehended from an incrustation of the fusible disk, so that it will not readily melt when the steam is admitted to it, it will be but the work of a moment to close the cock at D, thus shutting off communication with the boiler, when the whistle can be removed, the disk cleared of any incrustation, replaced, the whistle screwed on, and communication opened again with the boiler.

The construction of this device may be seen at Wm. T. Garratt's Brass Foundry, corner of Fremont and Mission streets, San Francisco. Mr. G. will give all needful information and furnish the detector to order, in any style and quantity to suit.

GRANITE FROM MASSACHUSETTS. The granite for the new Mint, it is said, is to be imported from Massachusetts. The stone will be quarried, dressed and fitted in that State, and then sent thousands of miles to be laid up into form. Of course the contract was let to the lowest bidder; but really the project, or the necessity for it, is strongly suggestive of something wrong in our labor system, especially when we have such noble quarries of granite at Folsom and Rocklin, and that, too, directly on railroad routes. The high price of labor here, still further increased by the operation of the eight-hour system, rendered it impossible for contractors to base their bids upon California labor. Consequently the chief part of the labor is done in Massachusetts, while California laborers are suffering for employment. Contractors say that the difference amounts to twenty-five per cent. in the cost of construction.

FOSSILS IN SHALE.—Mr. Barkas, of Newcastle, Eng., offered prizes to coal pit boys to induce them to search for fossils. The result has been that large numbers of fossil remains have been picked up; and recently one of the lads found the lower jaw of a true mammal. The discovery is one of great interest.

New Books.

MECHANICAL SAWS.—(From the Transactions of the Society of Engineers, 1867.)—By S. W. Worsam, Jun. Illustrated by eighteen large folding plates. Philadelphia, Henry Carey Baird—1869. 8vo. pp. 36.

This book treats its subject with completeness, although the text is comparatively brief. The large folding plates form the especially valuable feature of the work. All forms of saw-teeth, saw-sets, gauges, files and other tools used about saws, saw-sharpening machines, timber frames, buckles, tillers, etc., etc., are given in outline, with all the measurements and dimensions, so as to form complete working drawings of the same. Full explanations of all these drawings, and full directions for the use of all the apparatus, are given in the text. We give a short extract to show the style:

"The rules for regulating the forms of saw-teeth must necessarily be arbitrary, as much depends upon the nature and quality of the wood, and the direction in which it has to be sawn. In cross-cutting, the object is to sever every fiber or thread, and as the material in this direction is almost non-elastic or unyielding, teeth of an acute and nearly lancet-shape must be employed, so that acting like a series of knives in rapid motion, they cut the threads asunder rapidly and sweetly, the saw-dust produced having a fine granular appearance. On the other hand, in ripping or cutting with the grain, the desideratum is to separate the texture, as it were; and as in so doing the teeth do not meet with so much resistance and resilience from the filaments as in cross-cutting, they may be made much larger and coarser, thereby producing small shavings or chips, rather than saw-dust."

For sale by A. Roman & Co. Price, $5.

A TREATISE ON THE TEETH OF WHEELS; demonstrating the best forms which can be given to them for the purposes of machinery, such as mill-work and clock-work. Translated from the French of M. Camus, by John Isaac Hawkins. Third edition. Philadelphia: Henry Carey Baird. 1869. 8vo. pp. 102.

M. Camus handles the subject scientifically, and on true mathematical principles. The teeth of wheels should be made exactly right; the matter properly admits of no guess-work, although it is too often done by "rule of thumb." Even with workmen who profess to be guided by system in laying-out the teeth of wheels, there is much indefiniteness. One places the leg of his compass at the center of a tooth to describe with the other leg a segment of a circle for the next tooth, and others place it at different distances from the center, each,—says the editor,—according to some inexplicable notion received from his grandfather, or picked up by chance." The duty of properly constructed wheels is performed more equably, and with less expenditure of force,—and the wear being less, of course more cheaply,—than is possible with wheels mapped out by the eye, however practiced an eye it may be. The whole subject is reduced to demonstration in this book, and illustrated by eighteen plates. The appendix, by the editor, Mr. Hawkins, contains much valuable information. For sale by A. Roman & Co. Price $3.

FIFTY-DOLLAR parasols, with watches in the handles, are the latest frivolity at the East.

Communications.

The New Roasting Furnace of the American Mining Company.

Written for the Mining and Scientific Press.

Most of the Colorado ores have been subjected up to this time to all the different ways of amalgamatiou. The method least to be recommended is the stamping of the raw ore, with amalgamation following directly on shaking tables. Steam amalgamation furnishes better resnlts (up to sixty per cent. of the precious metals); but Keith's process is the best. This process consists in pulverizing the raw material in a Ball crusher, blowing the product down an inclined furnace shaft through the flame by a ventilator, and finally amalgamatiug. It is asserted that hy this process the ore is "dead"—roasted—and that ninety per cent. of the gold is secured. But neither one nor the other is actually the case. Experiments made with the roasted ore revealed the fact that it contained sulphates in abundance, among them eveu sulphate of iron. As to the percentage of gold secured, it was ascertained that it amounted at best to 75 per cent., while copper and silver were entirely lost. But just at the present moment, when the time is not far wheu, by the completion of the Union Pacific Railroad, a chance is offered to profitably gain the large contents of copper, its loss is to he considered an important deficiency in the process, not to mention at all that the process is not fit for ores with even a small percentage of lead, and that large masses of ore are lost as dust, as any one can see who takes a look at the works.

Aa soon, therefore, as by direct communication with the East the conteuts of copper in the Colorado ores begina to enhance their value, amalgamation will have to be given up, and the smelting process will have to be introduced. This process, even now, when there is no direct and cheap communication with the States, may be considered as the hest.

At Lyons' works, at Black Hawk, it has been used for some time; but owing to the fact that a more complicated and dearer way—the cupelling with lead—was chosen, it did not come into more general use. Besides heing complicated, this process has to labor nnder the disadvautage that considerable losses must be encountered by lead going into the slag and carrying gold and silver with it. The gold and silver in one ton of the lead, contained in the slag, was found to be worth $100. This disadvantage, as well as the large amonnt of fuel used during the different operations, and the high wages, have caused the abandonment of this process also. Instead of it, the ore is roasted now so far that enough sulphur is left still to make the formation possible during the following smelting of a matt, which contains, besides all the gold and silver, as much copper as possible. Adapting tho process to the present circumstances, a matt is secured which contains enough copper to pay the expense of transporting it to England.

The first requisite for a smelting process in Colorado is always a well conducted and cheap roasting of the ore; hut of the great variety of contrivances invented for that purpose, only one suits the requirements made of a perfect roasting apparatus. That is the terrace-furnace of tho American Mining Company.

The conditions of a perfect roasting furnace consist of the followiug:

1. Cheapuess of the apparatus.
2. Cheapness of working it.
3. Perfect removal of the sulphur contained in the ore.
4. Ease of regulating coustantly the temperature, and cousequeutly the whole process.
5. A long and uuinterrupted working of the apparatus.
6. The saving of all the sulphurous acid produced hy the roastiug for the production of sulphuric acid.

To all theae requirements the terrace furnace responds in the most perfect manner. None of tho apparatus invented up to this time can compare with it favorahly. Its form and arrangement are briefly described in the following:

The furnace is a shaft twenty feet high, four fcet wide and two and a half insido. The roasting material is put in a pulverized form into a hopper on top of the furnace, which has in a cast iron hottom three narrow slits. Through these the ore falls upon three grooved rollers, which, on being turned, allow the ore to fall through three small shafts (two and a half feet by two inches), left open in the top wall, into the furnace. Here the free fall of the ore is arrested by three terraces, made out of fire-clay, two and a half feet long and five inches wide. These, after heing covered with ore until the necessary angle is formed, allow the surplus to slide down on both sides. Eight inches lower this is caught again hy six terraces of the same size, from which it falls down upon seven terraces, and so alternatiug upou six and seven until it has passed through all the sixteen rows to the hottom. The whole room occupied hy the terraces is ten and a half feet, the single rows heing eight inches distant from each other. The terraces are arranged so that the ore must slide down both sides of each and fall into two lower ones. The impediments thus put in the way of the free fall of the ore keep it seven to eight seconds in the furnace in a red heat, giving the heat and air time to thoroughly desulphurize it. After arriving at the hottom it is drawn out of an opening left in the front wall.

Next to the perfect desulphurization, the most important item is the circumstance that only for the first heatiug of the furnace is a small amount of fuel necessary. After the red heat produced by the igniting of the ore is once established, the sulphur contaiued in it furnishes all the necessary heat. The movable grate inserted before is then removed, the hottom cleaned, and all openings, except the one left for drawing out the roasted ore and au air canal in the hack wall of the furnace, are shut. The temperature in the furnace, and consequently the whole process, is then entirely in the power of the workman, who, hy increasing or diminishing the speed of the feeding rollers, lets more or less sulphureted ore, and consequently more or less fuel, into the shaft. To facilitate the observation of the process, as well as for the removal of possible obstructions, a hole is left corresponding with every terrace in the front wall of the furnace, which, during the working of the furnace, is closed with an iron lid (or box?). This hox has a small round opening (one inch) in the middle, which is closed hy day aud opened whenever it is wanted for observation or workiug in the furnace with an iron rod.

After the ore has been ignited once, and all the openiugs are closed as before mentioned, the furnace will continue working until some of the terraces or inside walls get damaged. All small particles of ore which, horne along hy the strong draft, pass out of the flue, are deposited in a dust chamber, through which the flue passes into the chimney. The dust chamber has several cast iron slide-doors, by which the course of the gases can he so regulated as not to interfere with the cleaning from time to time while the furnace is in operation.

There being uo work necessary except the filling of the hopper, drawing out of the roasted orc, and observation from time to time, one man can do all the work on a furnace. This, too, is a very important item in Colorado, where wages are exceedingly high.

The quantity of ore to be roasted depends upou the amount of sulphur in the ore; the larger the percentage of sulphur, the smaller is the quantity of ore roasted. Two to two and a half tons is, however, the minimum, with even the most highly sulphureted ores. This seems to be rather slow work, but in reality it is not so at all. The two tons being entirely desulphurized, require mixing with two tons of raw ore, in order to secure a matt hy subsequent smelting. The quantity really furnished for the smelting process is consequeutly four tons—*i. e.*, as much as a common reverheratory furnace will furnish during a well conducted roastiug of twenty-four hours. But even if the quantity roasted was less than in some furnaces, there is another advantage in the perfect desulphurization of the ore. This is the facility it offers in calculating, to the very pound, the quantity of raw ore which is necessary to produce, with the knowu conteuts of copper of the dead-roasted material, a matt of a given percentage of copper. In reverheratory furnaces, on the contrary, roasting goes sometimes too far, sometimes not far enough. In the first case, there are losses by metal going into the slags; in the second, the matt contains too little copper, and wants another coucentration.

Let us suppose, then, the quautity roasted to be four tons and the wages $4 for twelve hours' work. The cost of roasting one ton will then be $2—a figure so low that no other furnace can compete with it, all of them requiring fuel except the English kilns. But these have the disadvantage again of not roasting perfectly and requiring more lahor. Considering all the advautages hrought forth ahove, it must be clear that none of the furnaces existing can compare with the terrace furnace of the American Miniug Company. In order to give a comprehensihle *ensemble* of the inducements offered by its use, I give a short enumeration of all of them below:

1. The cost of building one furnace amounts here (in Colorado) to $2,500; but if several are built at the same time, the cost will be considerahly reduced. The price of materials is: 1,000 common hricks (8x 2½x4 inches), $35 to $37: 1,000 firebricks, $300; cast iron, 25 cents per pound.
2. During the running of the furnace one workman is able to perform all the work.
3. All the sulphur contained iu the ore is removed—an advantage which enables the furnace to be used with great success iu roasting, for the Ziervogel method, which, at Mansfeld, in extracting the silver from a copper matt, requires *all* the sulphur to be previously removed.

(The use of the furnace for roastiug ores for treatment according to this method is the hest testimonial for its perfect roasting.)

4. The process is at any moment entirely in the power of the workman by the slower or faster working of the rollers.
5. The furnace works, without stopping, for years, if the material for building it is good.
6. *All* the sulphur contained in the raw ore is converted into sulphurous acid, and as this is uot mixed with gases originating from the fuel, it can be used with the best possible advautage for the manufacture of sulphuric acid.

The first one of these furnaces has heen built hy me lately at Lyons' smelting works at Black Hawk. A few weeks' working will enable the American Mining Company to give exact results. Many companies are now only waiting for these, to introduce the furnace, which, by its superior advantages will certainly in a short time do away with all others.

The only ores for the working of which it is not fit in its present form, are somo Nevada silver ores, which have to he subjected to a chlorinated roasting. Mr. Charles A. Stetefeldt, of Austin, Nev., has lately changed the form of the furnaco to adopt it to the ahove work, and a very short time will determiue its value for this process also.

A. Wolters.

The Press and the Pulpit.—It was announced some days since that Bigelow had been offered $10,000 a year and some interest in the paper to take editorial control of the New York *Times*. Greeley receives $7,500 for his services on the *Tribune*, and other editors on first-class papers receive from $5,000 to $7,000—only two or three in the natiou receiving so much as $10,000. There are, however, over 100 preachers who receive from $5,000 to $10,000 per annum for their services, and yet they have only to work one day in the seven, while the editor has to work six days. Cousidering the labor there is no comparison in the remuneration. But these matters will in time become equalized.

Glycerine.—Among the uses of this article, which are summed up in long array hy the *Scientific American*, are the following: Tubs and pails saturated with it will not shrink or dry up. Butter tuhs are kept sweet and clean, and can he used a second time. Leather is kept moist and is not liable to crack. Chronometers, clocks and watches are lubricated with it. It is mixed with the water in gasometers to keep it from freczing. It is used for preserving foods, wiues, etc., and in dyeing, and finally for the fearful compound nitro-glycerine; and the half is not told.

What Perseverance will do.—A man who has worked for years in the Brooklyn (N. Y.) navy yard as a machinist, has learned, iu his leisure hours, to speak, read and write Hehrew, German and Italiau, and obtained a thorough knowledge of geology and botany. Out of his savings he has purchased a library of 1,200 volumes.

A Nonagenarian Scientist.—Mrs. Somerville is now ninety years of age. She has this year been awarded the Victoria medal by the Londou Geographical Socicty.

The Quartz Mines of Alturas County.

[Written for the Mining and Scientific Press.]

Editors Press:—While the columns of your valuahle paper teem with information from every mining district of importance ou the Pacific Coast, it has often been a matter of surprise to me to observe that the rich extensive mining region of Alturas County should be almost a "terra incognito" to the great majority of the mining capitalists and quartz operators of San Francisco. Such, however, being undoubtedly the case, perhaps a short notice of a few of our principal mines, and the results of our milling operations, may not be uninteresting to some of your readers.

The Ledges.

The largest and richest of the lodes now being worked is the Atlanta. It has been traced for about 2,500 fect, showing in many places a well-defined fissure vein, varying from fifteeu to fifty feet in width; the inclosing walls and country rock, consisting chiefly of feldspathic granite and syenite, with occasional strata of greenstone porphyry. It is our richest silver-hearing lode, carrying in many places, however, a sufficient percentage of gold to render the hullion worth $8 per ounce. In the claims on this veiu, owned by Messrs. Strode & Co., a large deposit of very rich ruby silver ore has heen struck. The streak is about 2¼ feet thick, lying along the foot-wall of the ledge. It has heen followed for ahout forty feet, and shows every indication of heing continuous. A quantity of ore from this portiou of the vein was purchased hy Captain Kelly for $1 per pound, and he realized handsomely by the speculation. The company have now a fine ten-stamp mill (water-power), four Wheeler & Randall pans, and two settlers. They have lately added two Hungerford concentrators, which work to a charm, and save much finely-divided quicksilver and amalgam.

The Leonora ranks next to the Atlanta in richness. It is owned by energetic men who are good practical miners, doing much of their own work in a quiet unpretending manner, and laying up monthly a large amount of "filthy lucre." The ledge is about six feet thick and is inclosed by a rock resembling closely that of the Atlanta. Assays of ore from this vein, made hy Professor Libenau, have shown as high as $7,000 per ton, in gold. This company has a ten-stamp ateam mill, amalgamating in the battery and on copper plates. They have also in use sluices and blankets and one Hungerford concentrator. Sulphurets saved in this machine were lately forwarded to San Francisco for ameltng. They yielded $625 per tou. The Gray Eagle, Lucy, Hard Times and John Bascom, are all large and well-defined veius. Ore from these mines is being steadily worked in a custom mill on Yuba River, owned by Chesley Woodward, and with generally favorable results.

The supply of wood and water is inexhaustible, and in no instance has ore to be hauled over half a mile to any of the mills. There is a beautiful helt of rich agricultural land on the Middle Boise River, where magnificent crops of hay, grain and vegetahles are raised, at prices but little in advance of those of California. The few men of experience we have had to visit our camp have unanimously predicted a hrilliant future for the Yuba District.

Mining Engineer.

Yuha District, Alturas Co., Aug. 1, '69.

A New Industry—Not Successful, However.—The Sacramento *Reporter* of July 26th, says: "One of our citizens, and late member of the Assembly, lately entered upon an experiment to raise leeches on his premises. To this end he made an excavation on his lot, covered the bottom thereof with gravel, and deposited therein about $60 worth of leeches. In a short time thereafter he discovered that the leeches had disappeared—probahly run themselves into the ground. Their not appearing after his coustant watching, he had been advised to strip himself and go in, and see if he cannot coax them out. Had he gone down to the hardpan, or covered the bottom of his tank with zinc or other metal, he would have probably succeeded iu raising a fine crop.

Salt from Volcanoes.—It is said large amounts of crystallized salt were thrown out at the last eruptiou of Vesuvius, and that scientific bodies are occupied in investigating the cause and compositiou of the crystals.

Mechanical Progress.

Dr. Van der Weyde on Steam Pressure and the Indicator.—In a recent number of the *Artisan*, Dr. V. has an article from which we quote briefly: "It is easily demonstrated that steam engines generally give about all the power their pistons actually receive from the steam pressure; consequently, the greater part of the enormous loss of 85 to 95 per cent. must be in the boilers—much waste heat passing out of the flues; but most of the loss is perhaps due to the resistance of the water itself against its change in molecular conditions, from the fluid state into the state of vapor, while under strong pressure. * * * It is more than half a century since De Pambour proved why, in taking the pressure *in boiler* as the basis of our calculation, we obtain results surpassing the real effective power. He proved that this difference was in proportion that the conducts connecting boiler and cylinder were short or long, so as to present less or more resistance to the steam. He observed that the cylinder could never be as hot as the boiler, which would diminish the pressure as soon as the steam entered the cylinder; also that its pressure on the piston became greatly reduced as soon as this receded before the steam, and for this reason alone must be considerably less than the boiler pressure; that the back pressure, as well as the direct steam pressure on piston, depended also greatly on the nature and condition of the valves, ports, etc.; and therefore, finally, that the only way to be followed for obtaining the true "indicated" horse-power is to use the "indicator."

Balancing Heavy Cylinders.—Exactness can only be approximately attained in practice. The *Scientific American* gives the following method in use by one who has had considerable experience: "The cylinder being keyed upon its axle, as it is intended to run, is lifted by a tackle or crane, and lowered, so that each of its journals rests upon a stout steel straight-edge placed so that its upper surface is exactly level, and parallel with its fellow. These straight-edges should not only be so rigid as to suffer no sensible deflection from the weight of the cylinder to be balanced, but they should be very hard and as smooth as it is possible to make them; and great care should be taken to keep them free from indentations. The journals of the cylinder must also be round and polished in order to secure delicate action. All the friction is thus converted into rolling friction, and this is reduced to a minimum. The cylinder can now be loaded on its lighter side, or *vice versa*, until it will remain perfectly motionless when stopped in any part of its revolution. We have balanced heavy cylinders in this way until they would revolve by placing upon either side one twenty-thousandth of their weight."

Double-Bogie for the Central Pacific Railroad.—*Engineering* for July 16th gives a side elevation of a double-bogie locomotive constructed in England, after Fairlie's plan, to order of the Central Pacific Railroad Company. It has six pairs of 3½ feet wheels, in two groups; each group being driven by a pair of 15-inch cylinders with 24-inch stroke. It has 1,650 feet of tube surface, 125 feet of firebox surface, and a firegrate area of twenty-five square feet. With a mean cylinder pressure of 100 lbs. per square inch, it will exert a pull of nearly 11½ tons. The weight of the engine in working order is fifty-four tons.

Black Lead as a Lubricator.—Van Nostrand says: "Black lead, which has only been used as a lubricator for wooden machinery, is now applied by M. Deloris to every kind of machine, from the heaviest vehicles to the most delicate watch-work, so dispensing with the use of oils and grease of all kinds. It is said to be used with many vehicles in Paris, and in machinery at several factories."

The Closed Hearth in Blast Furnaces. In this system, the *tuyeres* are inserted about nine inches above the scoria outlet, thus bringing the full force of the blast upon the materials. Fuel is saved, and more and better iron produced. The casting may be carried on without taking off the blast, and the "blowing-through" process after every blast, with its consequent waste of heat, is unnecessary.—*Engineer.*

How to Test the Lubricating Value of Oil.—An oil-tester, devised by T. R. Shaw, is thus described in *Scientific Opinion:* "On a vertical shaft fitted in bearings is fixed a disk, on the upper surface of which rests a circular or partly circular block, the two surfaces in contact being finished as true planes. The lower disk is caused to revolve rapidly, the continued rotation of the block being prevented by a cord, one end of which is attached to the side of the block, the other to a spring balance. The block is kept in position on the revolving disk by means of anti-friction bowls. A thermometer is fixed in its center. A small portion of the lubricant to be tested is applied to the disk, the metal block is placed in position, and the lower disk is caused to revolve until a certain temperature which has been fixed upon as suitable for all seasons, as for example 70 Fah., is indicated by the thermometer, when the test of the oil is commenced by noting the frictional resistance indicated on the scale of the spring balance, readings being taken from the scale at intervals during the continuance of the experiment."

The Manufacture of Lead Pipe.—A hollow cylinder is constructed in such a manner as to admit a steel die in one end with an opening of the shape and diameter of the outside of the pipe required. A solid piston or ram fits this cylinder evenly without friction. Attached to this piston is a long, movable "core" or spindle, of the diameter of the inside of the pipe. The cylinder is filled with melted lead, allowed to "set," and the piston pressed into it by a hydrostatic press. When the pressure is applied, the lead is forced forward and out between the orifice in the die and the core, which accommodates its movements to the action of the lead in forming the pipe. Still another and better plan is the introduction of a stationary spindle, which produces a superior and more uniform article. As the lead is forced through the dies in the form of a pipe, it falls over a large pulley or drum, where it is caught by a workman with heavy gloves and guided upon a roll, where it is coiled up and set aside. Lead pipe is pressed out at the rate of a mile an hour. All sorts of bar lead are made in the same manner. The pressure exerted in the manufacture of bar lead and pipes is enormous, varying from two to three tons to the square inch.

Electro-plating of Paper.—The paper is made a conductor by placing it for an hour or two in a solution of nitrate of silver to which liquid ammonia has been added until the precipitate at first made is dissolved. It is then dried, and exposed to a current of hydrogen gas. By this means, the silver is reduced to a metallic state, and the material becomes so good a conductor of electricity that it may be electro-plated with copper, silver, or gold, in the usual manner.

The Management of Safety-Valves.—The necessity of greater care in the handling of safety-valves is thus set forth by the *Locomotive:* "It is the practice of many to lift the valve suddenly, and then let it fall, the spindle thereby receiving a violent blow; and in numerous cases we find the spindle sprung to such an extent by this practice, that the valve can lift but very little, and in some instances not at all. The valve should be raised carefully and let down gently; not only for the reasons above stated, but from the fact that nothing is more dangerous than the sudden shock caused by the valve being suddenly opened and shut. Valves should be frequently raised to prevent their becoming stuck, but too much care cannot be used in the operation. During the month, several cases of this evil have come to our knowledge; in one of which it was necessary to cut the spindle out, after the cap had been taken off."

Zinc Melted in Iron Vessels.—The zinc of commerce contains iron, which it drives from the vessels in which it has been melted. For this reason it dissolves more readily in acid than pure zinc. Dr. Oudemans had occasion to examine a metallic mass that had collected at the bottom of an iron vessel where zinc had been kept melted during the space of many weeks, and which, by its high melting point, had become useless for the purpose of manufacture. The fracture was fine and lustrous, though very different from that of pure zinc,—was much whiter and more jagged. It dissolved in dilute sulphuric or hydrochloric acid with considerable violence, and contained 4·6 per cent. of iron.

Scientific Progress.

The Principle of Life not a Subject of Science.

It is so refreshing,—and, we had almost said, so rare,—to hear truth of the highest order from a French scientist, that we take genuine satisfaction in here giving the closing portion of the address delivered at the opening of the Faraday lectures by M. Dumas. The words breathe the very spirit of Faraday himself; and show that M. Dumas, who has been called the Faraday of France, is fully worthy of the appellation,—inasmuch as he resembles his illustrious namesake not only in his devotion to science, but also in his recognition of the fact that there are truths which, being in their very nature undemonstrable, are not the subject of science, but of faith alone. If it be objected to this item that not being science, it is out of place in a column headed "scientific progress,"—we reply, that to our mind, no proof of such progress could be stronger, than the fact that scientists of eminence are beginning to recognize the infinite as a necessary element in their calculations. Such admission must smooth the way towards the grasping, so far as in man lies, of many a truth which does actually come within the domain of science, but which, without such admission, must forever be to it a stumbling-block and a reproach.

"The chemist has never manufactured anything which, near or distant, was susceptible even of the appearance of life. Everything he has made in his laboratory belongs to 'brut' (raw) matter; as soon as he approaches life and organization, he is disarmed. Thus for a century past, the empirical elements of matter have been recognized and separated; their combinations have been multiplied to infinity; physical forces have been brought back to a common origin—motion—and one has been at pleasure changed into the other; and yet—is the intimate nature of matter known to us?—No! Do we know the nature of the force which regulates the movement of the heavenly bodies and that of atoms?—No! Do we know the nature of the principle of life?—No! Of what use, then, is science? What is the difference between the philosopher and the ignorant man?

"In such questions the ignorant would fain believe they know everything; the philosopher is aware he knows nothing. The ignorant do not hesitate to deny everything; the philosopher has the right and the courage to believe everything. He can point with his finger to the abyss which separates him from these great mysteries—universal attraction which controls 'brut' matter, life which is the source of organization and of thought. He is conscious that knowledge of this kind is yet remote from him, that it advances far beyond him and above him.

"No: life neither begins nor ends on the earth; and if we were not convinced that the real Faraday does not rest under a cold stone, if we did not believe that his intelligence is present here among us and sympathizes with us, and that his pure spirit contemplates us, we should not have assembled on this spot, you to honor his memory, I to pay him once more a sincere tribute of affection, of admiration, and respect!"

Metallic Uranium.—Valenciennes obtained this metal by placing a mixture of chloride of uranium, chloride of potassium, and finely cut sodium in a porcelain crucible, covering it with a layer of dry chloride of potassium, placing the whole in a plumbago crucible, filling the intestines with coke powder, and heating to redness. The metal produced by this process is melted by increasing the heat to a very high point. The uranium is found in a hard black clay, from which it is separated by washing.

Antimony in Galvanic Battery.—The following arrangement is found by Böttger preferable to Daniell's, Minotto's or Leblanche's batteries, as regards both force and durability. Antimony is used instead of graphite. A cylinder of amalgamated zinc is placed in a concentrated solution of equal parts of common salt and sulphate of magnesia; the antimony is placed in a porous cell filled with dilute sulphuric acid.

The Undulatory Theory of Light.

In a recent lecture at the Royal Institution, Prof. Tyndall said that all the phenomena of light are fully explainable by the undulatory theory. "The strength of the theory of gravitation rests on its competence to account for all the phenomena of the solar system. On a precisely similar basis rests the undulatory theory of light, only that the phenomena which it explains are far more varied and complex than the phenemena of gravitation. You regard, and justly so, the discovery of Neptune as a triumph of theory. Guided by it, Adams and Leverrier calculated the position of a planetary mass competent to produce the disturbances of Uranus. Leverrier communicated the result of his calculation to Galle, of Berlin, and that same night Galle pointed the telescope of the Berlin Observatory to the portion of the heavens indicated by Leverrier, and found there a planet of 36,000 miles in diameter.

"It so happens that the undulatory theory has also its Neptune. Fresnel had determined the mathematical expression for the wave-surface in crystals possessing two optic axes; but he did not appear to have an idea of any refraction in such crystals other than double refraction. While the subject was in this condition, the late Sir William Hamilton, of Dublin, a profound mathematician, took it up, and proved the theory to lead to the conclusion that at four special points of the wave-surface the ray was divided not into two parts, but into an infinite number of parts, forming at those points a continuous conical envelope instead of two images. No human eye had ever seen this envelope when Sir William Hamilton inferred its existence. 'If the theory of gravitation be true,' said Leverrier in effect to Dr. Galle, 'a planet ought to be there;' 'If the theory of undulation be true,' said Sir William Hamilton to Dr. Lloyd, 'my luminous envelope ought to be there.' Lloyd took a crystal of Arragonite, and following with the most scrupulous exactness the indications of theory, discovered the envelope which had previously been an idea in the mind of the mathematician. Whatever may be the strength which the theory of gravitation derives from the discovery of Neptune, it is matched by the strength which the undulatory theory derives from the discovery of conical refraction."

Wollongongite. — Prof. Silliman describes in the July number of the *American Journal of Science and Arts* a very remarkable hydrocarbon from Australia, which has recently been received, and of which this is the first scientific mention. It is a peculiar kind of cannel coal, and is found in the Wollongong District of the Illawarra coal field, in what is called the Blue Mountain range. It has been found only in one place, five miles inland forty miles south of Sydney. Its color is greenish black and brownish black. It is sectile, the thin shavings curling up under the knife. The shavings are translucent, and under the microscope transmit amber yellow light. It is readily kindled in thin splinters by a match. Analysis in a platinum crucible gave 82.5 per cent, volatile matter, 6.5 fixed carbon, 11.0 ash. It is exceedingly rich for gas-making; the illuminating power of the gas yielded could be measured only by diluting it largely with common street gas of known power. Prof. Silliman has called it, provisionally, *Wollongongite.*

Nineveh and Genesis.—At a recent meeting of the Royal Asiatic Society, Sir Henry Rawlinson announced that "the progress now reached in the collection and arrangement of the Nineveh inscribed fragments, make it beyond a doubt that they would be able to derive the whole of the history given in the Book of Genesis, from the time of Abraham, from the original documents; and it was not too much to expect that almost the same facts and descriptions would be found in the Babylonian documents as in the Bible. He hoped very soon to have ready a paper on the Garden of Eden, in which he would show that was the natural name of Babylon. The rivers here the very same names, and the Babylonian documents gave an exact geographical account of the Garden of Eden. The Flood and the Tower of Babel would be found to be most amply illustrated in the Babylonian documents."

Farming and Gardening.

How to Make Turkeys Useful.

The French excel all other nations in their management of poultry, especially where large establishments are brought into use. The latest item in this direction which we have noticed is the way they contrive to secure the hatching of the eggs of the *creve cœurs*, a breed of hens but little inclined to set, and poor mothers at best, but excellent layers. The French peasants press into the service for the hatching process hen turkeys. This they do in the following way:

Take a hen turkey of the previous year that has never laid, and put her in a basket containing plaster eggs. Cover this basket with a strong linen cloth. It will be from four to six days before she will overcome her natural disinclination to set, and become attached to the eggs, or, as the French have it, "take an affection for them." When the prejudice is entirely overcome, they place the real eggs under her, she easily covering eighteen or twenty of them. The covering is removed, and the innocent turkey accomplishes the task assigned her without further trouble, save that it is necessary to remove her once a day, that she may partake of refreshment. If this is not done, these "setters" sometimes starve to death, rather than voluntarily leave their charge, so great is their forced affection. After hatching, the little chicks are placed in charge of another turkey, and the mother supplied with a new lot of eggs, continues her mission. These young turkeys are made to hatch three or four "litters" in a season.

"Cancerine" is the name of a new artificial manure, which is now being prepared in large quantities along the shores of Delaware Bay. It is produced from the bodies of a small crab, which is found in immense numbers all along the Atlantic coast. These little fish are first dried and then ground up and packed in sacks for sale. There are places where they can be shoveled up by the wagon load; and it is thought if the onslaught made upon them does not permanently reduce their numbers, the production of "cancerine" can be developed to many thousands of tons annually.

Two Eggs a Day.—Mr. A. Wright, of Fredericktown, N. J., writes to the Farmers' Club of New York that a townsman of his, Mr. Samuel Stanley, has a hen which has been laying two eggs per day for ten days, and both at the same time. One of them is larger than an ordinary one, and the other the size of a quail's egg. This is considered a thing without a parallel, except in the classic literature of old Grimes, where it is said of just such another, "On Sunday she laid three."

Heading-off Grasshoppers.—Mr. W. W. Rnmford, of Tule, Tulare county, in this State, writes to the Farmers' Club of the American Institute of New York that he has devised a method of heading-off the grasshoppers from his trees, which he describes as follows: "Trim the trees up four or five feet from the ground, then put a disk of smooth tin, funnel-shaped, just beneath the lowest branch, large end downward. If the bark of the trunk is tender, protect with matting. The grasshopper does not jump high, but crawls up the tree or stalk of a plant. In this way they will get the top of a telegraph pole. I also have some small trees protected by gauze netting. They rarely injure early sown grain, as it is too near ripe before their advent. I have three trees with heads only twenty inches from the ground, protected by the tin disks, and so far they are safe, although the ground around is alive with the passing horde. I have sat by the hour to see them climb up the tin and then climb down again." It is possible that the above hint may be valuable in many localities on this coast where this terrible pest is working so much injury to our crops and trees.

Pears.—Of the 2,000 and more varieties of pears described and known to those who make pomology a study, only about seventy or eighty are counted as truly valuable.

The Way to Blanket Horses.

But few persons, comparatively, understand how to apply a blanket to a horse to prevent him from contracting a cold. We frequently see the blanket folded double and across the rump and a part of the animal's back, leaving those parts of the body which need protection entirely exposed to the cold.

Those parts of the body of a horse which surround the lungs require the benefit of a blanket in preference to his flanks and rump. When we are exposed to a current of cold air, to guard against any injury from contracting cold, we shield our shoulders, neck, chest and back. If these parts be protected, the lower part of the body will endure a degree of cold far more intense, without any injury to the body, than if the lungs were not kept warm with suitable covering. The same thing holds good in the protection of horses. The blanket should cover the neck, withers and shoulders, and brought around the breast and buttoned or buckled together as closely as a man buttons his overcoat when about to face a driving storm. Let the lungs of a horse be kept well protected with a heavy blanket, and he seldom will contract a cold, even if the hindermost parts of his body are not covered.

The forward end of horse blankets should be made to fit as closely around the breast of a horse as our garments fit our bodies. Most horses take cold as readily as men, if not blanketed while standing after exercising sufficiently to produce perspiration. So long as a horse is kept in motion there is little danger of him suffering from cold; but allow him to stand for a few minutes without a blanket to protect his shoulders and lungs, and he will take cold sooner than men.—*Ex.*

The Yellow Locust.—Hon. T. C. Peters communicates to the farmers club, his experience in raising the yellow locust, as follows: "In preparing the seed I have been in the habit of pouring boiling water upon it, and let it stand twenty-four hours; then drain off the water, and pick out all the seeds which have changed to a whitish color and plant at once in rows in well prepared ground for the nursery. Repeat the operation upon the seed; the second and probably the third time, it will be changed and ready to plant. Care should be taken to keep the plants clear from weeds or grass the first year, and the next spring the seedlings will be large enough for their final transplanting.

An Utah Hybrid Cherry—Something New.—The Mormons of Utah have started a new cherry. It is a cross between the cherry and the wild plum, producing a dwarf tree with willowy branches. The fruit approaches the size of a plum, but retaining the distinct shape and seed of the cherry. It is very prolific, and trees a year old bear fruit. Mr. J. E. Johnson, who writes about it, says that the best plan for making a well-shaped tree is to bud it into the limbs of a two or three year old peach tree, about four feet from the ground, and then clip in the limbs, so that they will not reach the ground with loaded fruit.

Wire Fences, once quite popular at the East, are fast going out of use. One great reason is because animals, particularly horses, often injure themselves seriously by rushing upon such fences unawares. Wire formerly used for that purpose is now in considerable demand for grape trellises, for which it is found admirably adapted. Wire so employed is galvanized and annealed.

Steamed Food for Animals.—A farmer in Massachusetts has tried steaming in his stable for food for five years. He says it costs a third less to winter his cows, and they give a fourth more than when fed on raw hay and grain.

John A. Roebling.—This eminent engineer, who died on the 22d ult., graduated at the Royal Polytechnic School at Berlin, Prussia. The subject of suspension bridges had always engaged his special attention. His graduating thesis was upon that theme; and his fame, which is great and merited, is based upon the works of that description which he has executed in the United States. The Niagara bridge, that over the Alleghany at Pittsburgh, and the Ohio bridge at Cincinnati, are all of his construction; and the projected bridge over the East river, if finished,—says the *Iron Age*,—"will be an enduring monument to his name and fame."

Familiar Science.

How to Look and Appear Well.

Every one likes to appear well; every woman likes to look handsome. Now, it is not the features alone on which we depend for good looks. There are many women, especially, who look handsome, simply because they appear intelligent; and in spite of what nature has done for their features. Good teeth are a help to good looks; they are also essential to good health—hence they should be cared for. A good, clean skin is another aid to good looks; but washing alone will not secure it; neither will painting. Proper food and a healthy stomach are essential. No one can have a fair skin who breathes impure air, especially during the night; hence cool, well-ventilated lodging rooms are essential to this end. But neither features, teeth nor skin can alone make up a really beautiful woman, or good looking men. In order to look and appear to the best advantage we must wake up the mind and soul. The brain must be active. We must think and read—not the trashy literature of the day; but books that call forth thought—that impart knowledge. We must choose for our companions, if possible, those who are our superiors in intellect, from whose conversation we may derive new and advanced ideas. We must attend lectures, such as are instructive and suggestive. In this way the mind will be kept awake, active and healthy, and the dull, sleepy, pensive look, so common among novel-reading women, and idle, listless men, will pass away from the eyes. The countenance will wear a bright, intelligent look, which all admire; and which forms the chief element of what constitutes the really handsome, good looking man or woman. No woman ever looks so handsome, or so really interesting, as when she is engaged in earnest conversation upon some topic which calls out, to the utmost, her thinking powers. Her whole soul is aroused, her eyes beam with intelligence—she is then really angelic. With this understanding of beauty, let us all strive to grow handsome.

Degree of Heat Necessary for Making Bread.—It is stated by Prof. Hosford, and various other authorities, that the degree of heat required for making bread may vary from 220 to 450 degrees. Experience does not sustain this assertion. It has been fully shown that the heat required need not exceed 212 or 240 degrees. When the latter degree of heat has been maintained a proper length of time, your bread will be found thoroughly baked. If it is desired to form a crust quickly, that work cannot be done at less than 350 or 400 degrees; although if a longer time is employed, a lower degree may accomplish the work, but it will be at the expense of driving too much of the water from the dough to make a good bread. Dough may be introduced into an oven heated to 400 degrees, if the temperature is allowed to fall rapidly to 300, and then 250 degrees; but at 450 degrees, the highest temperature named by Prof. H., tin will melt, and any housewife must be aware of the result of exposing a pan of dough for any length of time to such a degree of heat.

Value of Science.—As industry attains higher stages of its developments, as its processes become more complicated and refined, and competition more keen, the sciences are dragged in, one by one, to take their share in the fray; and he who can best avail himself of their help is the man who will come out uppermost in that struggle for existence, which goes on fiercely beneath the smooth surface of modern society.

"The Air we Breathe."—Careful analyses of the dust in the English cities, taken at an elevation of about five feet from the ground, have proven that it abounds with minute animalculæ and vegetable refuse, so light as to float in the atmosphere.

Foreign Substances in the Eye.

Nothing, of a trifling nature, is more distressing to a person than the accidental presence of a foreign substance in the eye. A slight knowledge of the anatomy of the eye will, as a general thing, enable any person so afflicted to at once remove the cause of the trouble. A correspondent of the *Hearth and Home* explains the process as follows: Just underneath the margin of the lid there is a small groove or gutter for the flow of tears to the inner angle of the eye. Foreign bodies tend to fall into this groove, and if they are angular like cinders they adhere in spite of the current of tears which now flow in great abundance, and sooner or later carry off smooth substances. Now if you raise the margin of the upper lid and turn it over, the cinder or grain of sand will be exposed, and may easily be removed with the point of a pencil, or with the finger covered with a handkerchief.

This operation may be performed in the following manner: Take a small pencil, or some similar instrument in the right fingers, and with the thumb and forefinger of the left hand seize the eyelashes of the upper lid and draw the lid gently out from the ball; press the point of the pencil downward, upon the upper surface of the lid, about one-fourth of an inch from its margin, and at the same time carry the margin upward, by the eyelashes, and double it over the point of the pencil. You will then have the little gutter described exposed to view, and in most cases you will find the cause of your trouble lying therein; and from whence it can readily be removed. The operation is perfectly painless, and may be readily performed by any person. It may be much aided by requiring the person operated upon to look downward when the lid is being averted, and upward when the operator wishes to restore the lid.

It is of great importance to remove such substances as speedily as possible, and as, in nearly every instance, such cases arise when no one is with us, it may be well to give the railroader's mode of ridding himself of such an annoyance. The railroadman, when any cinder becomes lodged in his eye, takes hold of the lashes of the upper lid and draws it out, at the same time closing the eye, then, by letting the upper lid go, it falls over the lower lid, when, upon opening the eye, the cinder will lodge upon the outside of the lower lid, and can be wiped off with a kerchief or hand. All this can be done by a person himself even if he has but one hand.

Why can you not light a piece of paper in a lamp chimney? Because of the carbonic acid and vapor of water (steam) which is so freely formed in the chimney. The presence, in any considerable quantity, of either of these substances, would prevent the formation of a blaze, although the heat might be sufficient to char the paper. For the same reason a piece of paper laid flat on a clear fire does not blaze, although it chars. The paper is enveloped in carbonic acid gas, which prevents the approach of the atmospheric air, a condition necessary to active combustion. When you blow the paper, so laid upon the fire, the carbonic acid gas is dissipated, and the paper fanned into a flame.

Cement for Iron and Stone.—M. Pollack, of Saxony, says that for a period of several years he has used, as a cement to fasten stone to stone and iron to iron, a paste made of pure oxide of lead, litharge, and glycerine in concentrated state. This mixture hardens rapidly, is insoluble in acids (unless quite concentrated), and is not affected by heat. M. Pollack has used it to fasten the different portions of a fly-wheel with great success; while, when placed between stones, and once hardened, it is easier to break the stone than the joint.

How to Extinguish Fire in a Chimney. Shut the door of the apartment to prevent a current of air, and throw a few handfulls of common salt upon the fire, which will immediately extinguish it. It neither causes smoke nor precipitates the soot. The philosophy of this is, that in the process of burning the salt, muriatic gas is evolved, which is an extinguisher of fire.

Cider may be preserved sweet for years by being put up in air-tight cans, after the manner of preserving fruit—heated up to the boiling point and sealed. The cider should first be settled and racked off from the dregs; but fomentation should not be allowed to commence before canning.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, August 14, 1869.

Financial.

We are again compelled to chronicle a pinched money market. Coin is scarce and hard to be obtained, even on good security. Immense supplies of grain are coming from farming districts, and accumulating at the various depots inland; but the means for marketing are not here. The stimulus of increased prices in England, while there is little advance upon freight charges, has had slight effect on rates in California, simply because we are without the funds requisite to take advantage of the opportunity. Large amounts of coin have been locked up in real estate, in quartz mills, in new mines, in loans on mortgages, in constructing railroads, and in a variety of other ways. Foreign capital, which was here in large supply, some time since, finding itself underbid, quietly returned whence it came, and the domestic supply is insufficient for our requirements. In addition, the following drains occurred during July: Absorbed in duties, $952,000; personal tax, $250,000; coin shipped, $330,000; interior absorption, $750,000; total, $2,282,000. The Branch Mint gave us $1,500,000, leaving a deficit of $782,000 for the month. Large sums of British capital, on the point of seeking investment in this market, have been withheld from the fear that a greenback currency may be adopted in California—a currency which has been the curse of other States, where they are strenuously engaged in trying to establish their business on a permanent gold basis.

The discount line is very much restricted, and rates in bank are quotable at 1¼@1½ per cent. per month, for first-class securities; second-class borrowers finding limited accommodation at 2@3 per cent. monthly. The demand for bullion is light. Gold bars rule from 800@850; silver bars from par to ¼ per cent. premium; currency bills on Atlantic cities pay 32½ per cent. premium on gold; coin sight drafts are negotiable at 1¼ per cent. premium; telegraphic transfers, 1½ per cent. premium; sterling exchange, 48¾d; commercial exchange, 49½@49⅝d; Mexican dollars bring a premium of 6@7 per cent.; gold in New York, August 12th, 134¾; legal tenders, with us, 73@73½.

Appended is a statement of the public debt, made August 1st, 1869:

Debt bearing interest in coin	$2,107,931,300 00
Debt bearing interest in lawful money	61,810,000 00
Debt bearing no interest	423,372,859 12
Debt on which interest has ceased since maturity	4,790,656 64
Total debt—principal outstanding	$2,691,404,215 76
Accrued interest to date and coupons due not presented for payment	33,718,522 81
Total debt, principal and interest	$2,635,122,738 57
AMOUNT IN THE TREASURY.	
Coin held for gold to Government	$66,415,770 92
Coin for which certificates of deposit are outstanding	35,725,830 00
Currency	23,381,654 29
Sinking Fund in United States coin interest bonds and interest collected and accrued thereon	11,932,147 07
Other United States coin interest bonds purchased and accrued interest thereon	15,110,590 00
Total	$153,556,002 28
Amount of the public debt, less cash and Sinking Fund and purchased bonds in the Treasury	2,481,566,736 29
Amount of the public debt, less cash and Sinking Fund in the Treasury on 1st of July	2,489,002,480 58
Decrease of public debt during the past month	7,435,744 29
Decrease since March 1, 1869	41,896,623 72

The reduction would have been greater had the Government not advanced the interest on the Pacific Railroads bonds, to the extent of $1,636,861, and paid drafts to the amount of $2,500,000 on the last day of July. The price of five-twenties for 1867 appreciated considerably under the action of Mr. Boutwell, and it is very likely that the advance will be maintained. Dealings in sixty-sevens have been on a very extensive scale, in view of the probable future demand by the Government. Tenforties and all other national securities have experienced a corresponding improvement. The malevolent and bitter attacks of which Mr. Boutwell was made the object by Wall street speculators and their hireling satellites are toning down before the numerous and prominent evidences he is steadily giving of a wise, judicious and comprehensive administration of our financial affairs. Nevertheless, there are not wanting those who still revile him with malignity for having choked them off from their expected prey. He has, however, gained the confidence of business men, and is reducing our public indebtedness after a manner which awakens renewed hopes of a speedy reduction in taxes. If the surplus money in the National Treasury should not be used to lessen our public debt, what should he done with it? We learn of no considerable depletion of funds from money centers to move the vast crops now being harvested, which is a certain indication that there is abundant means for the purpose, without crippling the demands from other sources.

Our Branch Mint statistics for July are necessarily curtailed, as that establishment closed on the 10th, to settle its accounts, preparatory to being turned over to the new officers. It will be re-opened on the 14th inst. The coinage for July amounted to $1,040,000 against $2,355,000 for the same month last year, and $1,152,000 for July, 1867. The total coinage from January 1st, 1869, to date, is $6,347,000 against $6,013,000 same time last year, and $9,096,500 for the first seven months of 1867. As the mint was not working, except for ten days, in July, the amount of $1,500,000 was permitted to be drawn from the bullion fund for commercial purposes, refined bullion being, to an equal value, substituted in its place. The bullion fund now contains $2,500,000, inclusive of the $1,500,000 withdrawn, as stated.

Gold bars ranged from 875 to 880 during July. The fact of having enormous quantities of breadstuffs, which are wanted by people who have funds and are waiting to purchase, and still be oppressed by a tight money market, shows an anomalous condition of affairs, and bad financial management somewhere.

The exports of Treasure from Aug. 1st to date have been as follows:

Aug. 4—Per Oregonian—		
To China	$546,973 30	
To Japan	26,404 00	
		573,377 23
Aug. 1 to 5—Overland to New York		68,216 63
Aug. 9—Per Sacramento—		
To New York	$ 48,047 15	
To England	449,887 83	
To Central America	151,625 42	
To Panama	20,000 00	
		679,560 40
Aug. 6 to 11—Overland to New York		86,903 33
Total since August 1st, 1869		$1 502,787 61
Previously this year		24,616,473 70
Total since January 1st, 1869		$25,119,261 31
Corresponding period, 1868		24,839,173 82
Increase this year		$ 280,087 49

City Stocks.

During the past week we note sales of Spring Valley Water stock at $60 50@61 per share.——Over 100 shares of Omnibus Railroad stock realized $69 per share. The usual monthly dividend will be paid on the 16th inst.——The People's Insurance Company disbursed a dividend of1 per cent., on the 10th inst. Sixty shares of this stock sold at $80@81 50 per share.

The Bank of California will pay its customary monthly dividend of 1 per cent. next Monday.

Mining Share Market.

The mining share market does not present any very encouraging features since our last similar reference. Under quite extensive sales of various leading descriptions, such as Savage, Yellow Jacket, Chollar-Potosi and Original Hidden Treasure, prices of the entire list of stocks dealt in show a very marked recession. This condition of the market is mainly attributable to the stringency at present existing in our money market, which will not allow money to be used for mining stock purposes when all available funds are needed for legitimate commercial transactions. True, our advices from the mines are meagre and rather unsatisfactory, but they certainly do not warrant the low rate of prices ruling at this date.

The Assessor of White Pine county, for the quarter ending June 30, 1869, makes the return of the amount of ore reduced and the yield of bullion from the same: Amount reduced, 4,174 tons; yield, $412,814, being equal to nearly $100 per ton. This is the product of 34 mines, the largest yield coming from the Consolidated Chloride, amounting to 931 tons of ore. We can see nothing discouraging in such an exhibit as this. The *News* of a late date says: "The reduction in the rate of wages may now be considered as established. This, it is understood, will be speedily followed by a reduction in the price of milling from $35 to $20 per ton. These very material reductions in the cost of extracting and reducing our ores must ultimately result in the investment of an increased amount of capital in the development of our mines."

The aggregate sales in the San Francisco Stock and Exchange Board during the month of July for the past five years have been as follows:

July 1865	$4,721,193	July 1868	$8,474,998
July 1866	1,558,874	July 1869	5,667,618
July 1867	6,822,200		

CHOLLAR-POTOSI—was in the market to a very large extent during the past week, selling at a sharp recession from closing prices of last week. During the week ending August 6th 1,408 tons of ore were extracted and 1,543 sent to custom mills. Previous week 1,309 tons were extracted and 1,484 sent to reduction works. The ore for the week under review came from the following localities: Blue Wing, 600 tons; New Tunnel, 300; Grass Valley stope, 308. The New Tunnel yielded less than the usual quantity, nor is any increase expected until the main tunnel north is connected with the deposit found on the third floor in the drift running north. No change in the Blue Wing. The Grass Valley stope exhibits some improvement. On the 9th inst. 198½ tons of ore were delivered to seven different custom mills.

HALE & NORCROSS—ruled much lower under considerable sales. For the week ending August 7th the ore yield amounted to 690½ tons, against 743½ tons the previous week. Of this amount the fourth station level furnished 422½ tons. During the same time they delivered 891¾ tons to the reduction mills, leaving on hand 29 tons. On outside dumps they have 1,257½ tons of low grade ore, not taken into the above account.——SAVAGE was very largely dealt in at a heavy decline. The bullion returns for the month of July aggregate $51,000, against $89,500 in June.

GOULD & CURRY—shows a sharp fall from prices ruling early in the week. During the week ending August 9th 377 tons of ore were extracted and 356 forwarded for reduction. Work on the seventh station is progressing finely, the station being completed, and preparations are well advanced for drifting southward.——OPHIR is dull of sale at a decline. The drift has attained a distance of 515 feet.——CROWN POINT was less active than last week, and sold at a heavy decline. An assessment of $5 per share was levied on the 6th inst.——A dividend of fifty cents per share has been payable by the SIERRA NEVADA Co. since the 10th inst.——DANEY and SEGREGATED BELCHER each levied an assessment of $1 per share.——EUREKA (Cal.) disbursed a dividend of $5 per share on the 10th inst.——AMADOR (Cal.) reports a bullion yield of $46,000 for the month of July.——GOLDEN RULE (Cal.) announces its usual sixty-day dividend of fifty cents per share, payable on the 26th inst.

CHINA TO BE EXPLORED.—The *Scientific Review* says that a project for the formation of a society for the exploration of China is being actively promoted in Belginm, with a view to the introdnction in the Celestial Empire of railroads, telegraphs, and the development of its mineral wealth. The project is very favorably viewed by King Leopold, who has traveled in China.

A WORLD'S FAIR at Washington, a year hence, is talked of.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Cons., Sierra co., Aug. 6, 50c	Sept. 7	Sept. 23
Bowdell, White Pine, June 26, 10c	Aug. 5	Aug. 23
Bucklin, White Pine, July 14, 5c	Aug. 20	Sept. 10
Bramide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Brodi, White Pine, June 22, 25c	July 29	Sept. 4
Bramide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Central, Storey co., Nev., June 23, $2.50	July 24	Aug 14
Germania, White Pine, July 13, 25c	Aug. 13	Aug. 26
Cherokee Flat, Butte co., July 20, $5	Aug. 3	Aug. 18
Chester, White Pine, June 29, 15c	Aug. 4	Aug. 25
Cuba Cons., White Pine, June 24, 6c	July 24	Aug. 10
Cayuse Chief, White Pine, June 23, 10c	July 30	Aug. 19
Perdidera, Mexico, July 23, $1	Aug. 24	Sept. 8
Central No. 2, Storey co., July 14, $5	Aug. 21	Sept. 8
Crown Point, Storey co., Nev., Aug. 6, $5	Sept. 9	Sept. 28
Daney, Lyon co., Nev., Aug. 5, $1	Sept. 8	Sept. 26
Daniel Webster, White Pine, June 30, 15c	July 30	Aug. 19
Eclipse Cons., White Pine, Aug. 11, 20c	Sept 16	Oct. 8
Evening Star, White Pine, June 25, 10c	July 24	Aug. 10
French, White Pine, July 19, 5c	Aug. 24	Sept. 13
Glenwood, El Dorado co., Aug. 2, 30c	Sept. 8	Sept. 28
Gold Hill Q., Storey co., June 25, $1	Aug. 2	Aug 23
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 30
Germania, White Pine, July 13	Aug. 13	Aug. 26
Hamilton, White Pine, Aug. 10, 50c	Sept. 10	Sept. 27
Hermeles, White Pine, July 10, 25c	Aug. 12	Aug. 27
Hidden Treasure Cons., June 24, 5c	Aug. 4	Aug. 25
Hidden Treasure, White Pine, June 29, 50c	Aug. 4	Aug. 25
Hope Gravel, Nevada co., Aug. 8, $1	Sept. 13	Oct. 4
Hornet, White Pine, July 24, 10c	Sept. 8	Sept 30
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 24
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Julia, Storey co., Nev., Aug. 4, 75c	Sept. 7	Sept. 25
Kincaid, Tuolumne co., Aug. 4, $2 50	Sept. 8	Sept. 25
Kenuck, Storey co., Nev., Aug. 5, $14	Sept. 6	Sept. 25
La Plata, Sonora, Mex., July 8, 25c	Sept 13	Oct. 1
Lucky Ledge, White Pine, July 15, 10c	Aug. 16	Sept 6
Lyon M. & M., El Dorado co., July 21, $2	Aug. 30	Sept. 20
Mammoth, White Pine, July 16, 50c	Aug. 23	Sept. 13
Mazepa, White Pine, June 30, 10c	Aug. 5	Sept. 16
Magenta, White Pine, July 24, 10c	July 29	Sept 4
Mahogany, White Pine, June 17, 10c	July 23	Aug. 13
Mammoth Cave, White Pine, July 12, 10c	Aug. 19	Sept. 23
Morning Star, Alpine co., July 21, $1.20	Aug. 31	Sept. 18
Marlborough, White Pine, July 10, 5c	Aug. 24	Sept. 13
Ophir, Storey co. Nev., July 23, $3	Aug 25	Sept. 16
Oriental, Sierra co., July 21, $5	Aug. 21	Sept. 6
Pocotillo, White Pine, Aug. 2, $2	Sept. 6	Sept 27
Phœnix, White Pine, July 12, 15c	Aug. 12	Sept 30
Rainbow, White Pine, June 22, $1	July 27	Aug. 14
R. R. M. Co., Humboldt, Nev., July 27, 25c	Sept. 13	Oct. 1
Segregated Belcher, Storey co., Aug. 5, $1	Sept. 9	Sept. 29
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug. 28
Silver Eagle, White Pine, July 14, 25c	Aug. 16	Sept. 6
Silver Sprout, Inyo co., July 27, 50c	Aug. 31	Sept. 20
Tecumseh, Calaveras co., July 22, $7.50	Aug. 24	Sept. 15
Treasure Trove, White Pine, July 27, 20c	Aug. 31	Sept. 18
Timberhill, White Pine, July 1, 5c	Aug. 17	Aug. 30
Virginia, No. 2 White Pine, July 21, 25c	Aug. 26	Sept. 11
Wells, White Pine, Aug. 10, 30c	Sept. 17	Oct. 7
White Pine Water, June 23, $30	July 28	Aug. 16
West California, White Pine, July 10, 10c	Aug. 17	Sept. 25
Yosemite, Humboldt district, Nev., July 7	Aug. 21	Sept. 10
Yellow Jacket, Storey co.	July 19, $10	Aug. 18—Sept. 17

MEETINGS TO BE HELD.

Cuba Cons., White Pine.....Annual Meeting, Aug. 16
Metropolitan.....Annual Meeting Aug. 17
Meadow Valley, Lincoln co., Nev..Annual Meeting Aug. 19
Senator, Storey co., Nev.....Annual Meeting Aug. 23
West Point, White Pine.....Annual Meeting Aug. 25

LATEST DIVIDEND.

Amador Co., div. $8 per share.....Payable August 7, 1869
Alpha Cons., Storey co., Nev., $2.....Pay. June 19, 1868
Bacon, Storey co., Nev., div.....Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.....May 10, 1869
Crown Point, dividend, $7.50.....Payable Sept. 12, 1868
Chollar Potosi, div., $2.....Payable August 6, 1869
Eureka, div. $5.....Payable July 10, 1869
Empire M. & M., Nev., dividend $6.....Payable May 15, 1867
Gould & Curry, div., $7.50.....Payable May 15, 1867
Gold Hill Q. M. & M.—dividend, $7 50.....Payable July 13, 1868
Golden Chariot, Idaho, div. $35.....Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c per sh.. Pay. July 25, 1869
Hale & Norcross, div. $6.....Payable July 10, 1869
Imperial, Storey co., Nev., div.....Payable June 20, 1868
Industry, White Pine, div., $1.....Payable July 1, 1869
Keystone, Sierra co., div., $2.....Payable May 6, 1869
Kenuck, div., $20 per share.....Payable Jan. 10, 1869
North Star, dividend, $5.....Payable Aug. 15, 1868
Occidental, div. $2.....Payable March 2, 1869
Pacific Consolidated, 5-20s, 1862.....Payable June 18, 1868
Sand Spring Salt, dividend $1.....Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50.....Payable Dec 19, 1868
Savage, Virginia, Nev., dividend, $4.....Payable May 11, 1869
Sand Springs Salt, Virginia, Nev., $1.....Payable July 5, 1869
Sierra Nev., Storey co., Nev., div. 50c.....Pay. August 10, 1869
Virginia & G. H. Water Co.—Dividend, payable April 15, 1869
Yellow Jacket, div., $5.....Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, August 13, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 6 20s, 1865, '67, '68	$ —	—
United States Bonds, 6 20s, 1864	—	—
Central Pacific Bonds, 6-20s, 1862	87	89
Legal Tender Notes	74¼	73½
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 0s, 1851	par & Int.	
San Francisco City Bonds, 0s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87¼
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par & Int.	
San Francisco City and Co. Bonds, 7s, 1856	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1868	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	76	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Sutter County Bonds, 0s, 1890	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	57	58
State Telegraph Co	25	—
Spring Valley Water Co	60	61¾
GAS COMPANIES.		
San Francisco Gas Co	80	81½
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	69	70
Central Railroad	60	—
North Beach and Mission Railroad	—	70
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	600	620
California Insurance Co	—	1900
Union Insurance Co	96	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	91
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
the Bank of California	150	160
MINING STOCKS—WASHOE DISTRICT.		
Alpha	—	18
Baltimore American	—	—
Belcher	16	17
Bullion, G. H.	—	5
Crown Point	29	30
Eole (Va.)	—	10
Confidence	30	38
Consolidated Virginia	—	—
Chollar-Potosi	19	19¼
Daney	—	1
Exchequer	6½	8
Empire Mill and Mining Co.	45	50
Gould & Curry	73	78
Gold Hill Quartz	40	45
Hale & Norcross	91	92
Imperial	39	40
Jacks	1	4
Justice and Independent	4	5
Kentuck	151	155
Lady Bryan	35	38
American	26½	27
Occidental	12½	13
Ophir	14	14¾
Overman	59	60
Segregated Belcher	6¾	7
Savage	61	61¼
Sierra Nevada	8	8¾
Union	—	—
United States	—	—
Yellow Jacket	37	38
MISCELLANEOUS MINING STOCKS.		
Amador (California)	250	269
Aurora, White Pine	5	—
Eureka, (California)	210	—
Golden Chariot (Idaho)	25	30
Silver Cord (Idaho)	1	4
Golden Rule, California	18	—
Pocotillo, White Pine	—	3

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, August 13, 1869.

Flour, Extra, ₱ bbl	$5 50	@	$6 00
Do. Superfine	4 75	@	5 00
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 40	@	1 75
Oats, ₱ 100 lbs	1 60	@	1 65
Barley, ₱ 100 lbs	1 05	@	1 35
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	1 05
Onions, ₱ 100 lbs	75	@	1 00
Live Oak Wood, ₱ cord	$9 00	@	$14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Lambs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14¼	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	20
Do Rio	—	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	8¾	@	10
China Rice, ₱ lb	6¾	@	6¾
Coal Oil, ₱ gallon	45	@	46
Candles, ₱ lb	15	@	18
Ranch Butter, ₱ lb	40	@	60
Goshen Butter, ₱ lb	50	@	55
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	45	@	50
Lard, ₱ lb	16	@	17
Hams and Bacon, ₱ lb	14	@	16
Shoulders, ₱ lb	8	@	9

Retail Prices.

Butter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	30	@	40
do. Oregon, ₱ lb	25	@	50
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	50	@	70
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, Sweet, ₱ lb	1½	@	2
Potatoes, ₱ lb	3	@	5
Tomatoes, ₱ lb	5	@	—
Onions, ₱ lb	5	@	—
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	7
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	18
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. D	7	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Aug. 13, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		Per ton.
12 per cent. ore	$16 00	22 per cent. ore	$43 56
13 " "	18 62	23 " "	46 45
14 " "	21 20	24 " "	49 33
15 " "	23 25	25 " "	52 22
16 " "	26 22	26 " "	55 11
17 " "	29 12	27 " "	58 00
18 " "	29 91	28 " "	60 80
19 " "	34 90	29 " "	63 77
20 " "	37 78	30 " "	66 66
21 " "	40 87	31 " "	69 55

These prices, we believe, will be found substantially correct, and can be realized at this date.

New Books in the Mechanics' Institute Library.

The following works have lately been added to the Mechanics' Institute Library: Todd's Cyclopædia of Anatomy; Owen's Odontography; Owen's Palæontology; Hassall's Adulterations of Food, etc.; Max Müller's Lectures on Language; Lyell's Antiquity of Man; Tyndall's Glaciers of the Alps; Murchison's Siluria; Darwin's Animals and Plants Under Domestication; Mill's Analysis of the Human Mind; Laycock on Mind and Brain; Autiquity of Intellectual Man; Lecky's European Morals; Man and His Relations; Descriptive Ethnology, by Latham; McCosh on Typical Forms and Special Ends; Elements of Comparative Anatomy, Huxley; Draper's Anatomy, Physiology and Hygiene; Argyll's Reign of Law; Whewell's Novum Organon Renovatum; Whitney's Study of Language; Frost and Fire; Froude's History of England; Admiralty Manual of Scientific Investigation; Lownde's Bibliographer's Manual; Bibliography of Early English Literature; Craik's English Literature and Language; Wilson's Digest of Parliamentary Law; Roscoe's Spectrum Analysis.

French Architectural Works: Revne Générale d'Architecture, 25 vols., 4to; Architecture du 5me au 17me Siécle, 5 vols., 4to; L'Art ponr Tous, 6 vols., fol.; Edifices de Rome Moderne, 4 vols., fol.; Palais de Fontainebleau, 2 vols., fol.; Halles Centrales de Paris, 1 vol., fol.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Tarshish.—*Miner*, July 31st: We have assurance from Mr. Schwerin that though he now does not expect to start up before September 1st, it will not be later than early in October.

Globe.—More than usual interest is manifested in this work. A number of quartz feeders have been recently cut, all showing ore to the eye and assaying flatteringly. An experienced mine "captain" is expected here next week to take charge as foreman. A mill of 25 tons capacity will next month be put up.

Mountain.—Mr. Ray will put on an increase of force next week and push the cut across the lode. The rock looks well and the lode promises to be huge.

The boulders all over and through the soil to the bedrock on Boulder Hill, it is thought, will pay to assort for the mill, and parties are now at work.

Four men working on the Leviathan and good ore coming out.

Pennsylvania.—*Chronicle*, July 31st: The mine is looking well. The south drift is in solid quartz and paying ore, over six feet in width. The permanency of this mine is now beyond question.

BUTTE COUNTY.

Specimen Brick.—Butte *Record*, Aug. 7th: Mr. Slater, of the Trojan mill, near Enterprise, was in town on Wednesday, with a specimen brick of 40 ounces. These bricks are the result of two weeks' run, and do not vary in weight more than an ounce or two. The ledge is a steady paying one, yielding a profit of seven or eight hundred dollars per month to its owners.

Mountain Spring House.—A correspondent says: The miners in this section are already preparing for another season. At Upper Cascade (Drake's), they are working ten or twelve men, extending their ditch to Pinkard's, and building reservoirs. At Lower Cascade, ten or fifteen men are blasting down the falls to drain the valley. Moore & Co. have several men at work whip-sawing, digging ditches, and finishing a large reservoir, that will cover some 10 or 15 acres.

CALAVERAS COUNTY.

Petticoat.—*Chronicle*, Aug. 7th: A very rich lead of gold bearing quartz has been struck, during the past week, in the Petticoat mine at Railroad Flat. It is upwards of 8 ft. in width.

More Rich Rock.—Thirty-two tons of quartz from the "Bald Eagle" claim at Independence, owned by Gamble & Co., yielded over $1,500, as per assay.

Union Shaft.—Next week the Company will commence cleaning out and retimbering the old diggings preparatory to taking out gravel.

Golden Gate.—James Gleason has assumed control of the claim and commenced freeing it of water and getting it in condition for working.

Big Lump.—We were shown this week, a *chispa* of pure gold, weighing half a pound. It was taken from the Mokelumno by a Chinese company.

Copperopolis.—Letter to Sonora *Democrat*: The "mother vein" is here from 3 to 40 feet in width. At present there are two arastras running, on separate lodes; one owned by Tulloch & Co., the other by Davis & Co. The first have completed the grinding of a ton of rock which gave satisfaction, and has inspired them with confidence to erect a 10-stamp mill. The lode has been traced from Hunter's Valley on the south, to lone on the north, and prospects well throughout. The lead owned by Tulloch & Co., assays $4,100 per ton.

EL DORADO COUNTY.

Want of Water.—Placerville *Democrat*, Aug. 7th: At Gold Hill there is barely sufficient water for irrigating purposes, and the miners had to cease work. In our immediate vicinity there is not sufficient for the claims already opened, to say nothing of the great number that cannot be worked until a supply can be had.

LOS ANGELES COUNTY.

Soledad.—Correspondence Los Angeles *News*, Aug. 7th: Everything is moving along slowly and quietly, but sure. Although there is but little said on the outside about these mines, I am certain that they cannot be surpassed in extent and richness by any in this State. Yesterday the Eureka Co. cleaned up, after a run of 50 tons of rock, $1,295. The Co. is running a 10-stamp mill (water power); but owing to the scarcity of water are using from four to five of the stamps. Mr. Hayward, who is now here, in conenrrence with the rest of the company, has decided to erect a 10 stamp steam mill immediately. The Eclipse, owned by the same company, is not being worked, simply because the Eureka affords more rock than one mill can crush. There are many mines that, owing to the scarcity of cash, the owners are unable to open. We have the Champion, four feet wide, and cropping out for 1,000 feet, which yielded $10 per ton without assorting. Messrs. Serles & Yates crushed 100 tons of it at their mill with the above result. The extension of the Eureka, known as the Young America, crops out 500 feet, and has the same rock as the Eureka.

Rich Discovery.—Mr. Wm. Brown has discovered, near the summit that divides the plains of the Mojave from those of Los Angeles Valley, a vein of argentiferous galena ore, rich in silver, 20 feet wide, outcropping a great distance, with wood and water inexhaustible. In running a tunnel 800 feet, the vein can be struck 1,300 feet from the surface, and there are tons upon tons of ore upon the surface that would afford profitable employment for a furnace without sinking a foot upon the vein.

MARIPOSA COUNTY.

Sebastopol.—*Mail*, August 6th: John Snow informs us that he is drifting in his quartz claim, with flattering indications.

NEVADA COUNTY.

McClellan Mine.—Grass Valley *Union*, Aug. 4th: The George B. McClellan mine is about one mile and a half south of the Banner. The owners have a perpendicular shaft down 56 ft. There is ledge space of six feet between the walls and the quartz is, on an average, two feet thick. The ledge carries a large amount of metal, and the sulphurets are rich in gold. Steam hoisting and pumping works are now being erected.

Weekly Mining Review.—Same, 8th: Empire is opening a new level 1000 ft. down the incline. The ledge is two and a half feet thick. The new incline is down 230 ft. A building is going up over the new shaft....North Star will probably resume work on Tuesday. The mine is free from water....From Union Hill mine, gold to the value of $8,500 was brought in yesterday, which with a former clean up gives $12,000 for a month's run of the mine and mill.] The earnings of the mine are now devoted to development....The Idaho is in a prosperous condition.....William Penn is idle. Arrangements for heavier machinery are being made....The Wisconsin will put up 8 stamps forthwith. A clean up yesterday from 170 loads of rock gives $5,100 or $30 to the load.....The gravel claims of the Messrs. Brown, on Squirrel creek, have paid $8 per day to the hand, for every working day in the Winter and Spring. Water fails in the Summer.....The shaft on the West Eureka ledge is down 64 feet. The walls are well defined, and the crevice three feet wide....The deadest looking part of this district is Massachusetts Hill and Scadden Flat. There is idle machinery on the hill, and the claims on the flat are untouched. No one doubts the richnes of the ore in hill or flat; but consolidation of interests must be effected before the rust will be rubbed off.

....At the Allison Ranch mine, work is being prosecuted in setting up the pumping machinery at the old shaft. Until this pump is in place, the water from the lowest level, 465 feet, cannot be drained. In the meantime from the Carriboo, rock of exceeding richness is being taken. Twenty-four tons was crushed and cleaned up this week, yielding $200 per ton, independent of the sulphurets.

Good Clean Up.—10th: The clean up from Joseph Perrin's quartz mine, on Wolf creek, below Forest Springs, on Saturday, from 68 loads of rock, was $2,800.54, or a fraction over $41 to the load.

Good Rock.—*National*, 5th: A crushing was recently had at Stiles' mill, from the Mount Vernon mine, of ten tons of rock, averaging $31.37½ per ton.

Schuylkill.—9th: On Saturday a contract was let to John Farrell & Co., to run 30 feet for $16.50 per foot. The ledge is from six inches to three feet thick and prospects well, the rock showing free gold and an abundance of rich heavy sulphurets.

The Banner Mine.—*Transcript*, 7th: For some time past the company have been engaged in opening new levels and sinking the incline. They are now down 640 feet, and have so near completed their work that some time next week they will be ready to put on a full force of men. The number employed under ground will then be 60, and the entire number 100 or more. The mine, we understand, is looking first rate.

The Burns' Process.—Same, 8th: We understand that the funace at Meadow Lake, erected for the purpose of testing the Burns' process, is about completed, and that work will commence upon the rock on next Monday morning. The process, on a small scale, has proved good, and it only remains to test it in the working of large quantities of ore.

Lecompton.—*Gazette*, 4th: Mr. J. J. Ott, the principal owner of this mine, has had men employed for two weeks in reopening the ledge. Where they are now at work the vein is about a foot in width, and the ore very rich. In the course of a few weeks, it is the intention to put on a force of 20 men.

PLUMAS COUNTY.

Mills and Ditches.—La Porte *Union*, July 31st: There are 26 quartz mills in the county, carrying a total of 300 stamps, and have cost nearly a half million of dollars; there are 140 miles of water ditches, which have cost nearly an equal amount.

Crescent.—The last shipment of bullion was nearly $9,000.

SIERRA COUNTY.

Alaska Mine.—Correspondence of the *Appeal*, Aug. 2d: The Alaska, near Pike City, four miles from Camptonville, is yielding rock of unexampled richness. The extraordinary character of the ore recently worked may be estimated when we state that with a battery of only five stamps, running half the time, and with no appliances whatever for working sulphurets or blanket washings, the company have been enabled to declare dividends during the past three months amounting to $30,000. Less than six months ago this property was offered for sale at a sum not exceeding the dividends above named, to certain parties professedly anxious to buy, but who, fortunately for the owners, were too slow, or too tender-footed.

SISKIYOU COUNTY.

Oro Fino.—Correspondence of the Yreka *Union*, Aug. 7th: Most of the miners, water having failed, have gone to work in the harvest fields. Trimble & Co. are building a 10-stamp mill at their ledge in Hull's Gulch, near Mugginsville. This lead has prospected as high as $250 per ton. The company has incorporated with a capital stock of $50,000, with 1,000 shares of $50 each, which they propose to sell at $10 per share, assessable once a month at $1 per share; thus obtaining funds to build the mill and open the ledge.

Letter from Scott Valley, says: Squire Steele's new engine for pumping water and raising dirt at his claims on McAdam's Creek, has arrived, so that we may expect to hear of big strikes in the Steamboat claim. The gold is there.

TRINITY COUNTY.

Canyon Creek.—Letter to the *Journal* of 7th: "All the old claims along the creek are paying more or less. S. Obermeyer, John A. Berger, and the Baumgartner Brothers are doing well. Conrad Dannenbrink has a good claim. John Bolz is a farmer and miner. Doctor Rollin Smith and P. O. Grant are opening a new claim, and will do well."

TUOLUMNE COUNTY.

Golden Rock Ditch.—Sonora *Democrat*, 7th: The iron pipe across the Big Gap, formerly spanned by the suspension flume, is completed, and the water reached Big Oak Flat on July 30th. The entire section of country watered by the Golden Rock Ditch, can now expect a restoration of that prosperity enjoyed before the fall of the big flume. Mr. Rocca informs us that the pipe is 22 inches in diameter, 2,262 feet in length, and sustains 215 feet dead pressure. Probably the greatest bed of auriferous gravel in the Southern mines is covered by this ditch. Gravel Range has a length of eight miles in this county and four in Mariposa. It varies from one to two miles in width, and will average at least 50 feet deep. The course is N. W. and S. E. The labor necessary to open claims caused it to be neglected, when gold was laying around loose in the ravines and gulches; but for a year before the fall of the flume, work was being prosecuted on several claims. If those claims prove remunerative, and it is believed they will, that section will be the most prosperous in the Southern mines. Nor are the diggings wholly exhausted around the Garrotes, Deer Flat, Oak Flat, Spring Gulch, Moccasin Creek, Pino Blanco, and Horse Shoe Bend, all of which places are supplied with water by this ditch.

Richmond.—Correspondence of Same: The U. S. Grant mill, above American Camp, will be ready for crushing this week. The splendid hoisting works have been in full operation for the past two months, and the miners have been getting out rock which is rich. T. C. Clark, one of the owners, tells me that said rock will average $572 per ton. It assays over $3,000. Works will be erected for roasting the ore. Nearly $40,000 has been expended so far upon the mill and mine. Thirty men are employed.

Arizona.

Independence.—Prescott *Miner*, July 24th: Theodore Boggs arrived here this week from the Independence mine, with $225 in gold amalgam, which he got out of 2½ tons of ore arastraed by him.

Last week, Charles Otten and partner rocked out about $60 in gold dust, in a ravine near the Chase mine. One piece found by them weighed nearly $13.

Colorado.

Incas and Bullion Consolidated.—Central City *Herald*, August 4th: Mr. W. Rockwell, agent for this company, has been driving a tunnel into Fletcher Mountain, near the head of Black River, and has reached a point 600 feet from the surface. To strike the lode will require a tunnel at least 1,200 feet long. He has made a contract with Severance & Hall, of the Diamond Hill Company, New York, to bore a hole two inches in diameter and 800 feet long, beginning at the end of the tunnel. The machinery will be put in position in September. The work can be performed in 80 or 90 days.

The Wilson Steam Stamp Mill.—This mill, on the Cleveland lode, Trail Creek, does its work in a very satisfactory manner. It will crush two cords of ore in 24 hours, using one cord of wood. The ore will, it is claimed, yield $100 per cord.

Hoosier.—Boulder *Pioneer*, July 28th: Yesterday the miners struck upon a mass of wonderfully rich ore. The vein shows three feet, and is permeated and spangled for its entire width with wire silver (native). Thin flakes of this precious metal, some of them as large as the palm of a man's hand, are found in the seams among the ore.

Smith & Parmalee Mill.—The *Register* says: "Mr. Wells showed us a fine retort last evening, weighing 102¼ ounces, the result of last week's run of the Smith & Parmalee mill. The gold is very fine, and sells for $23 per ounce, currency, making $2,357.50 as the earning of the mill one week."

Idaho.

Fine Specimen.—Owyhee *Avalanche*, July 31st: We were shown by Mr. C. S. Peck, of the Potosi Company, a specimen of gold bearing quartz taken from the bottom of the shaft in the Potosi mine, which was literally full of "wire gold" running through every particle of it.

Placers.—Messrs. Angell, Bailey, Dolherg and others have, in anticipation of the new ditch, located placer claims on the side of Florida Mountain, which have been prospected with gratifying results.

Poorman.—At no time for the last two years has this mine shown better than at present. The ledge is widening and the ore getting better.

Empire.—Judge Robertson has sunk a shaft 18 or 20 feet deep on the third extension of the Empire, and has developed a fine looking ledge from 18 inches to two feet wide. Free gold is visible all through it.

Bullion.—Same of 7th, Aug: Amount of bullion assayed in Silver City, as returned to Assistant Revenue Assessor for Owyhee County, for the year ending June 1st, $1,590,378,36.

Bullion for July.—*Ware*, August 3d: Shipment per express from Silver City, nearly $97,000, currency.

Nevada.

COPE DISTRICT.

Miners' Meeting.—Elko *Independent*, August 7th: The meeting held on July 31st voted that placer claims need not be worked until May 1st, 1870; and that bar or bench claims shall be 200 feet front and run back into the bar or bench 400 feet.

Several gentleman returned from Cope within the last three days. They all speak highly of the appearance of the ledges that are being worked and of the reports about the placers. Arrangements are being made to bring in water to Mountain City, and several companies are making preparations to go to work as soon as the water comes.

The Silver City *Ware* of 6th says that several townsmen have returned from Cope and report favorably.

HUMBOLDT.

Unionville.—Letter to *Independent* of 4th: The miners' strike which occurred here about three weeks ago has about ended, and the mines are driving away as usual, mostly, however, with new sets of hands working ten hours a day, as de-

manded by the compromise. Evans & Co's new mill has reached Mill City, and will be brought up and put in place as speedily as possible.. At present it will be prepared to work only gold rock. In the Silver M. Co's ground a body of ore, described as the finest ever cut on the Arizona Mountain, was cut yesterday at the extreme southern end of the works, where the lode is about five feet in thickness between eastings; nearly the whole consisting of splendid ore, much of which will yield at least $1,000 per ton.

REESE RIVER.

From Mineral Hill.—*Reveille*, August 7th: Several of our citizens have returned. They represent the camp as being lively, though very little has been done as yet towards developing any of the mines. A good deal of rock is on the way to Austin to be worked, and a good deal more is piled up ready to be sent. All of this, however, is surface and float rock, large quantities of which were available. No substantial buildings have as yet been erected.

Reveille District.—Letters to the *Inland Empire* give the names and present condition of a number of ledges. We clip the following from the summing up: "The undeveloped condition of this district, so rich in mineral wealth, arises from the want of proper mining and milling facilities. There is not a single company that has one establishment for convenient working, and most of them are too poor to so establish themselves. Water enough can be concentrated in the town with proper effort to run a 10-stamp mill; though Lambert & Co., for the Buckeye Mill Co., have abandoned the plan, after a feeble trial, and are putting up their mill at Brobanet's place, 12 miles distant, where there is plenty of water. * * Most of the miners are poor, and will sell their mines at comparatively low figures. In viewing these three mountains of mineral wealth, with all the surrounding circumstances, I cannot but think it the most available place in the State for San Francisco and Chicago capitalists to invest a little of their surplus funds."

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

Mill Burned.—*Enterprise*, 6th: Yesterday, about noon, Weston & Co's water mill, on Gold Cañon, below the Sacramento mill, was destroyed by fire. The mill contained 10 stamps, and originally cost about $25,000; but when burned was probably not worth more than $10,000. The mill has not been running for some time. The steam mill belonging to the same parties, some 50 feet distant, was saved.

Imperial-Empire.—8th: The shaft is being repaired, and will be all right in three weeks. Some ore is coming from the upper levels.

Overman.—This mine is yielding about 30 tons per day of ore, worth $20 per ton.

Kentuck.—The Kentuck is yielding about the usual amount of milling ore from the upper levels, with excellent prospects on the 900.

Belcher.—A drift was commenced yesterday to connect with the 900-level of the Crown Point. The communication between the 850 and 730-foot levels was completed day before yesterday.

Yellow Jacket.—There are still about 75 feet of water and 30 feet of mud in the old north shaft. Some excellent deposits of ore have been developed on the 800 and 900-foot levels. In the south mine the air is good, and the usual quantity of average milling ore is being taken.

Hale & Norcross.—This mine is being vigorously worked. Prospect-drifts are being run in all directions, and shafts are being raised from level to level. These have developed many new and excellent bodies of ore, and have greatly increased the circulation of fresh air.

Occidental.—The new tunnel is now in 1,000 feet. Milling goes on as usual, as they were not running their water mill at the time it was burned down.

Sierra Nevada.—The mill is running constantly, and the ore is of the best quality. Their last run yielded $11,000.

Chollar-Potosi.—This mine is yielding some 250 tons of fine milling ore per day, principally from the Blue Wing level.

Gould & Curry.—They are taking out about 40 tons of ore per day, assaying some $45 per ton. The total yield of bullion for July was $36,217.18. The drift east through the ledge is progressing satisfactorily.

Items.—Same of 10th: The Sierra Nevada Mining Co. have declared their third monthly dividend of 50 cents a share on the new issue, aggregating $7,500, payable to-day.....An assessment of $1 per share was levied on the capital stock of the Segregated Belcher last Saturday, aggregating $6,400, and delinquent September 9th.... The annual statement of the Yellow Jacket shows the indebtedness of the company to be $251,000. The present assessment, when collected, will be $240,000.

The *Herald's* Virginia City correspondent says,—11th: "The mines along the Comstock were never worked to better advantage as far as this side of the divide is concerned. Those at the Gold Hill end have a damper thrown on them by the continued disability of the Crown Point, Yellow Jacket and Kentuck on account of the fire, which still burns within their depths; yet they, in the course of a few months, will recover even from that terrible blow. North of the Gould & Curry the lodge may be set down as dead and expensive property, except in the case of the Sierra Nevada mine, which is one of the best paying of any on the whole ledge, and is worked at the least cost."

WHITE PINE.

Mining Review of the Week.—*News*, Aug. 7th: "Owing to the strike against the reduction of wages, and the lawless proceedings of the Miners' League in forcibly ejecting workmen from some of our mines who were working at the reduced wages, the operations of some of our principal mines have been seriously interrupted during the past week."—[We gave the substance of what immediately follows, in an editorial note last week, the news having reached us by telegraph.—Eds. Press.] "Nevertheless, our bullion shipment for the past week amounts to $48,585.76, being an increase of over $8,000 above the shipments last week. We have no report of yesterday's shipment, if any was made. * * The Executive Committee, backed as they are, by the determination of our citizens to see the perpetrators of such outrages as those of last Wednesday morning severely punished, will without doubt be able to protect all miners willing to work for a fair compensation, and all other citizens in the exercise of their rights as freemen. The reduction in the rate of wages may therefore be considered as established. This, it is understood, will be speedily followed by a reduction in the price of milling from $35 to $20 per ton."

Items.—*News*, 3d: Liberty mine has struck rich chloride at 31 ft....4th: The Earl has sent 130 tons of ore to mill, and has about 30 tons left at the dump. But four tons of waste was taken out with the 160 of ore, and millmen offer $10 per ton for the waste. Pulp assays of the ore milled give an average of $310 per ton.... 5th: Eastern Slope tunnel struck quartz at a depth of 160 ft. The tunnel is in 230 ft. ....Several mines in the vicinity have recently been sold in New York....Fourteen tons from the South Metropolitan recently worked over $100 per ton. The ore improves as the shaft descends....Very rich ore at a depth of four ft., in Treasure Hill Consolidated shaft....*Empire*, Aug. 1st: The Earl has again been compelled to suspend operations. The Consolidated Aurora folks have sprung another title against it and yesterday a restraining order was issued out of the District Court. The Aurora has purchased the Colfax claim, at a cost of $12,000, and now propose going after the Earl....6th: We were shown yesterday two average assays of ore from a new mine on Mount Ophir, one running nearly $500; the other over $1,100 per ton....Eberhardt started up yesterday....The California did the same, with full force of men.

Bullion Hill.—*Empire*, 6th: The Bullion Hill Co. have now on grass 125 tons of ore which it is believed will mill $300 to the ton—the average assays running from $500 to $600. A quantity already reduced yielded at the rate of $1,100 to the ten, producing bullion of unusual fineness even for this district. The Bowie & Brown mine have on the dump 20 tons of ore that will mill $150.

Mills and Smelting Works.—*News*, 5th: The Metropolitan mill is constructing a spacious ore-house....A 10-stamp mill was shipped last week from San Francisco to Robinson District....A smelting furnace, capable of reducing 25 tons per day, is to be erected in Robinson District immediately....Joe Trench contemplates the erection of a mill for the Ophir Hill mines. ....*Empire*, Aug. 1st: Five loads of machinery for Col. Page's mill arrived in this city yesterday. The mill is brought from Belmont, and is to be put up in or near this city. It will run 20 stamps, and is new from stem to stern....The Aurora Consolidated Mining Co. contemplate the immediate erection of a 20-stamp mill at Shermantown....4th: The framework of the Stanford mill is up. It will probably steam up by September 1st....7th: The Treasure mill (Big Smoky) has turned out during the last fourteen days $40,000 in silver bricks, and it is expected to do still better for the next two weeks. It is now running on ore from the company's mine on Treasure werth $1,100 per ton.....8th: The Newark mill was yesterday shut down for repairs. It is expected to be ready to steam up again about the last of the present week. ....Jordan's Smelting Works at Swansea will go into operation to-morrow....*Telegram*, 4th: The Metropolitan mill is crushing third-class ore from the Post Hole mine on Chloride Flat. The Moyle mill started up to-day on ore from the Consolidated Aurora.

Mosheimer's Smelting Works.—*Empire*, 3d: Mr. Mosheimer has now one furnace running, of the capacity of eight tons per day, and will soon add several others. Everything there seemed working nicely, and we predict that before many years the great bulk of the reduction here will be by smelting. The blower of the furnace is run by a Hick's engine, a most unique invention.

Quarterly Proceeds of Mines.—*News*, 6th: We are indebted to Augustus Ash, the County Assessor, for the following statement of the quantity of ore crushed, the amount of bullion yielded and the amount of the tax thereon, for the quarter ending June 30th: Ore reduced, 4,174 tons; total yield, $412,814.19; amount liable to tax, $341,343.37; amount of tax, $11,093.65. It will be seen from the above figures that the average yield of all the ore crushed in White Pine County during the months of April, May and June was a fraction less than $99 per ton.

Stamps Running.—The *Alta's* Hamilton correspondent writes, Aug. 3d: Eleven mills have now 116 stamps running. "Add to this the 20 stamps of the Newark mill (the Centonary,) now running on White Pine ore, and you have 136 stamps in operation. Then we have the California mill of 20 stamps, Dayton of 20 and Monte Cristo of 10—in all, 50 more stamps nearly ready to run. By September 1st the number of stamps available for reducing the ore of this district will be 186."

Montana.

Elk Creek.—*New Northwest*, July 30th: Sexton & Co., Dugan & Co., and Stone & Co., are each working four men on their bedrock flumes, and taking out about $500 each per week on an average. Jones & Co. struck pay ten days since. This company have been two years and a half in running the flume, which has cost $8,000 or $10,000.

Lincoln Gulch.—There are some 200 men in the vicinity. There is 200 inches of water in the ditches, and the new one will supply 100 more. Everything is prosperous.

Highland Gulch.—A correspondent says: "The fluming companies are all in a flourishing condition. Prof. Swallow's mill is nearly in order, and will soon commence crushing from the Forest Queen. We were shown a beautiful specimen of retort gold from the Nonpareil lode."

Mr. Wm. Flowers' arastra in Highland Gulch makes gratifying returns. He uses a piece of Brussels carpet below the blankets. From this he cleans up an ounce per day that has passed over the plates, riffles and blankets.

Hot Spring District.—Virginia *Republican*, July 30th: Hall & Spaulding's mill is crushing from the Mother Hendricks' lead, 20 tons per day, which yields $20 per ton. Mr. Appleton has the Hobart mill employed in crushing quartz from the Galena lode at Sterling.

Argenta.—We learn that the Cable lode is being rapidly developed by a double shaft, day and night; that between 200 and 300 tons of ore are now ready for the furnace. The crevice is between six and eight feet in width, and rapidly running into carbonates much richer than the top ore.

Washington Gulch.—Last fall, William Parkinson purchased an interest in some bar claims for $900, secured a good supply of water to work the same for three years. He is now realizing 15 ounces coarse gold, to four hands, ground sluicing.

Bivens' Gulch.—The miners have introduced water through a ditch which they have made from the head of Granite Creek, a distance of five miles.

New Mexico.

Grant County.—*New Mexican*, July 24th: Mr. Hudson writes: "Messrs. Milby & Backus have struck some very rich quartz on their lead (Pacific No. 2). It is so rich that they have taken from some of the rock, pounded in a hand mortar, from $100 to $200 per day. Day before yesterday, Langston, McGee and Hart found another lead near the one they have been working from which they have taken, with the aid of a hand mortar, about $1,000 of gold in a day. The quartz found by Langston, McGee and Hart paid as high as $50 to the pound.

Oregon.

Lewis River Mines—Dalles *Mountaineer*, July 30th: We learn from Vancouver that a great excitement is growing up about the lately discovered mines on the headwaters of Lewis river. Several of those who went out last week have returned, reporting that they found prospects ranging from one to fifty cents to the pan. They have gone back with better outfits. Everybody is getting excited, and several hundred men will be in the new mines within a week. They are 50 miles from Vancouver.

Bohemia District.—The Eugene *Guard* says: "Several gentlemen left here yesterday for Bohemia. If they can get a road to the mines they are going to take a five-stamp mill in this season.

Burnt River Ditch.—The *Herald* says: "McCoy designs putting from 400 to 500 men on the work and rush it through at once, taking from here some 200 Chinese and obtain the balance up there—opening up the richest and most extensive mining creek north of the California line.

Sheffielders in Connecticut.

Two intelligent Sheffield workmen, who have been employed for some time in a cutlery manufactory in South Meriden, Conn., write to *Ryland's Iron Trade Circular*, to warn their countrymen "not to act rashly on the strength of pictures drawn by interested parties to induce them to emigrate." We quote a single paragraph, which indicates the especial peculiarity that catches the eye of an English artisan in an American establishment:

"The shops where the work is done are of a widely different character from those of home. They are generally built of wood, as are most buildings in this country, excepting in the large cities. They are, as a rule, roomy, light, and well ventilated. They contain a much greater amount and variety of machinery than can be seen in a Sheffield cutlery, machines being substituted for almost all laborious hand labor. Many of these labor-saving contrivances are exceedingly ingenious, and it is very interesting for a Sheffield cutler to go round and see the many easy ways there are of doing the same work quicker and better in many jobs at the making up of a knife through the application of a simple mechanical contrivance. There is, too, a much greater division of labor than at home. Work is mostly given out to bosses or contractors, each of whom does a specified part of the work, passing it on when done to the next, making an ordinary ivory table-knife to pass through the hands of about sixteen bosses. This system of dividing work admits of the employment of a great quantity of unskilled labor, and does away, to a great extent, with the necessity of high-skilled workmen."

Hell Gate.—Various complicated inventions have been got up for the removal of the obstructions in this passage; but all have lacked something. Major General Newton,—says the *Times*,—has decided that the first thing to be done is to clear away the reef opposite Hallett's Point, between the Gridiron Rock and the point where First street, Astoria, reaches the Hell Gate water. To create a channel here for large vessels necessitates a cutting down, vertically, of from seven to eighteen feet from the summit of the reef. The plan proposed is to sink a shaft in Astoria at a proper distance from the Hell Gate easterly shore, and, after reaching a sufficient depth, to tunnel laterally under the roof, and then explode the rock by means of either nitro-glycerine or gunpowder. This, of course, will bring down the rock from its present altitude, causing it to fill the tunnel that will have been run underneath it. The explosion will also break the rock into masses sufficiently small to admit of their being handled with facility, and removed by means of a derrick, or some other arrangement, at any place where the projecting points may be more than will allow a run of twenty-five feet of water in the clear. This plan, which is General Newton's own, seems to be perfectly feasible.

Steel Rails.—The New York *Express* states that the Hartford and New Haven Railroad have ceased laying steel rails because they make the track too unyielding, and are now putting down new iron rails.

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San Francisco:
Saturday Morning, Aug. 14, 1869.

Notices to Correspondents.

Woodman.—The horse chestnut is a noble and picturesque tree when full grown, and in the spring or flowering season presents a particularly beautiful appearance. The nuts are composed chiefly of starch, cellulose and caseine, with a little oil and mucilage. The shell of the nut, the leaves and the bark, contain tannin and coloring matter. In Switzerland, the nut is used to feed sheep; pigs will also eat them. The color imparted by the leaves, shell or bark, according to the strength of the infusion, imparts to silk and cotton a good durable brown or yellow. In France, the nuts are ground into a fine flour and mixed with water to the state of an emulsion, and in this form used in the manufacture of silk, woolen and cotton fabrics; after which operation the refuse, mixed with an equal proportion of pollard or middlings, is employed to feed poultry, for which purpose it is found to be both cheap and efficacious.

Solder, Nevada.—De Groot, Chief of the Mining Department of the Dutch East Indies, ascertained from actual survey that the tin of Banca, as is the case with the stream tin of Cornwall, has been derived from the disintegration of granitic rocks containing tin. In 1853 De Groot inspected all the stream works in the island, and found in the district of Paukalpinang three parallel veins running nearly east and west; one of them containing tin-ore in grains, like those found in the stream works. In 1855 W. Akeringa surveyed the Jeboes District, and found grains of tin-ore disseminated in granite; also that on every river that was streamed for tin, the largest grains were found nearest the hills, becoming smaller as the rivers approached the sea. As the rivers of Banca debouch into the sea in every direction from a central point, the above facts demonstrate that the Banca stream-tin is derived from the degradation of local rocks, and not the washing from continental mountains while the island was sunk under the ocean,—as was the opinion held for a long period; in fact, the Banca tin-streams form an exact parallel with those of Cornwall.

Napoleon the First.—The centennial anniversary of the birthday of Napoleon the First will be celebrated with appropriate honors and festivities on the 15th instant. Religious services will be held at the Church of Notre Dame, on Bush street, in the forenoon, after which the assemblage will proceed under military escort to the City Gardens, where a grand public festival will take place, to conclude with a ball and fireworks in the evening.

Eclipses.

Of all the phenomena of the heavens there are none which have more engaged the attention of mankind in all ages, than eclipses of the sun and moon. In the early periods of antiquity, and later, among unlearned nations, these events were regarded as alarming deviations from the established laws of nature, presaging public calamities or betoking divine displeasure. When the truth of astronomical knowledge was demonstrated by the power which the astronomer possessed of predicting eclipses, such phenomena were divested of their terror; and now eclipses are looked forward to by the multitude as matters of interest, and by the learned as events presenting rare opportunities for the more elaborate determination of various practical and scientific questions.

Among the subjects upon which eclipses are brought to bear, are:—The determination of errors in lunar tables, so important to navigators; to determine with greater precision the geography and figure of the earth; the parallaxes of the sun and moon, and other astronomical problems; the physical constitution of the moon, and of the sun itself, and of the space immediately surrounding it, etc.

Eclipses of the sun, as is well known, occur when the moon passes between that luminary and the earth; while eclipses of the moon occur when the earth passes between the sun and the moon. The former must always happen at the new moon, as on Saturday last, and the latter at the time of full moon, as is often observed. Eclipses of the sun always come from the west, and pass off towards the east. In eclipses of the moon this progress is always reversed.

The reason that eclipses of the sun are sometimes annular and at others total, is due to the fact that the earth and moon are sometimes nearer to the sun than at other times. When the earth is nearest to the sun, the apparent diameter of that luminary is so much increased that if the moon then comes directly between it and the observer a narrow ring of the sun is seen completely surrounding the moon. When the earth is at its farthest distance, the apparent diameter of the sun is so much diminished that the moon will completely cover it. The greatest possible duration of the annular appearance of any eclipse is twelve minutes and twenty-four seconds; the greatest possible duration of the totality of any eclipse is seven minutes and fifty-eight seconds. The moon, however, may continue totally eclipsed, or enveloped in the shadow of the earth, for the space of one hour and forty-five minutes. The earth is nearest to the sun in winter, and attains its greatest distance in summer. Hence, a total eclipse cannot occur in mid-winter, nor an annular in midsummer. A total eclipse, we believe, is impossible between the first of December and the first of February, and an annular between the first of June and the first of August.

In order to measure and record the path of eclipses, the apparent diameters of the sun or moon are divided into twelve parts, called digits, by imaginary lines drawn at equal distances across the apparent diameters. Eclipses can be calculated with the greatest precision, not only for years, but for centuries to come—and backwards as well as forwards.

The total eclipse of July 17th, 1860, was more accurately and thoroughly observed than any former one. It had been previously noticed in total eclipses of the sun that at the instant of totality, what appeared to be bright, rose-colored flames, shot out from behind the moon's disk, taking shapes very much like flames from the top of a burning building. Very little, however, could be learned of the true character of these phenomena until since the observations of the eclipse of 1860. It was not even satisfactorily proven till then whether they were connected with the sun or the moon. But, thanks to the spectroscope and photography, in the hands of skillful and scientific men, these questions, so important to a true understanding of the physical condition of the sun, have now been quite satisfactorily answered. It has been proven that they are tongues of flame, shut up from the surface of the photosphere, or luminous envelope of the sun—some of them to the height of many hundred thousands of miles, and 300 times larger than the earth. The spectroscope has also told us their nature, and the elements which are producing such wondrous combustion!

Further and still more important results are expected in this direction from the observations of the eclipse of Saturday last. Brief dispatches from several scientific parties have already announced that their observations have been most satisfactory. At Des Moines, Iowa, Prof. Harkness reports that they have secured 123 photographs of the eclipse, two of which were taken during the totality. Interesting results were also obtained from the spectrum observations. Most satisfactory results have also been received from Prof. Hayward, who was stationed at Bristol, Penn.

It will be recollected by many of our readers that on the 26th of March, 1859, a new planet, which has been named Vulcan, was discovered by a Frenchman named Lescarhault, moving in an orbit between Mercury and the sun; but which, we believe, has never been seen since. It has also been thought, for reasons well known to the scientific world, that there must be other small planets in the same zone of the solar system, but hidden from view by the brightness of the sun. Several astronomers had been especially entrusted with the duty of searching for those planets during the late eclipse. They were sought for both at Washington and Bristol; but were not seen from either of those localities. Probably other observers may have been more successful.

It will be months before the full results of the observations upon the eclipse of Saturday will be fully worked up and given to the public. When the work is done, however, there is every reason to believe that important results will be announced, especially with regard to the physical condition of the sun. Astronomers at the eclipse of 1860 got their feet on solid ground in that direction; and there is every probability that many great outstanding questions of much scientific interest will soon be settled; though in astronomy, as in all other departments of science, every new mountain top will only bring into view other loftier and still more distant summits.

Prof. J. D. Whitney, late of the California Geological Survey, is now in Colorado with a class of students from the Harvard Scientific School. The Professor expects to visit California previous to his return to the Atlantic States. It may not be generally known that during the year and a half or more since the Geological Survey has been stopped by cutting off its pecuniary support, both Prof. Whitney and Prof. Brewer have been more or less employed, at their own cost and expense, in completing such portions of the work of the survey as had been fully worked up in the field. Prof. Whitney has thus added to the list of the publications of the survey the second volume of the Paleontology of California, and two volumes descriptive of the Yosemite Valley—one entitled the "Guide Book" to the Yosemite, and the other the "Gift Book." The latter is one of the most beautiful and unique of American publications. Prof. Brewer, we believe, is still devoting what leisure time he can obtain from his duties at the Sheffield School in work on his report upon the botany of California.

Transportation in Bulk.

The Vallejo *Chronicle*, in noticing the fact that the grain elevator at that place has not yet been put into active use, says:

The proprietors of the elevator built the same only as a medium for receiving and handling grain, and it devolves upon other parties to send cargoes away. So far there has been no disposition on the part of grain owners to ship in bulk on their own account, and thus test the experiment. We learn that arrangements have been perfected recently to give this matter a fair test, and that three or four cargoes will be sent forward as soon as vessels can be engaged. A lot of wheat has been engaged from Santa Rosa, which will be forwarded through the elevator.

If it can be satisfactorily demonstrated that grain can be safely shipped from this port around Cape Horn, in bulk, a most important advantage will be gained for our great wheat-growing interest—one which will enable our farmers to realize from ten to twelve cents or more per cental over any price that can be paid for wheat which must be delivered on shipboard in sacks.

The handling and shipping of merchandise in bulk is one of the most important economical devices of the age, and is likely to soon find a very wide application. Oil has already, for a long time, been shipped in bulk, vessels being constructed with permanent iron tanks or bulkheads for that especial purpose. We last week mentioned the fact that the schooner Novelty had just arrived at Boston from the West Indies with a cargo of molasses in bulk. This first experiment of the kind was eminently successful, and effected a most important saving in the cost of transportation. It is thought that crude sugars may be handled in the same manner. Rice and various other grains, as well as wheat, may be handled by the elevator process; so may coffee. Liquid commodities of all kinds are peculiarly adaptable to this improved appliance of commerce. It is easy to conceive that an immense saving in the shifting and handling of cargoes of this description might be made by substituting the lift and force pump for the endless chain of the elevator.

But there is yet another, and one which, possibly, may yet prove the most important of all changes in the mode of transportation under consideration—that of coal. This suggestion, at first sight, will doubtless strike most readers with surprise; but a little reflection will show its extreme probability.

It is well known that only a very imperfect degree of combustion is attained in the ordinary mode of burning coal—in lamps and upon grates. It may not, perhaps, be so generally known that careful experiments, during the past two or three years, have shown quite conclusively that a far more effective and perfect degree of combustion may be obtained by first pulverizing it—grinding it to a fine powder and feeding it to the furnace, in that condition, by means of a blast. The cost of pulverizing it, as it comes from the mine, would be but a trifle in comparison with the advantage gained by the more thorough combustion attainable, when it is fed to the furnace in that condition. To this advantage may also be added a probable economy in handling by the application of the elevator to the new form which it would take as a pulverized fuel.

In fact it would be difficult to assign any limits to progress in this direction, so long as there is a single commodity still transported in packages under the old system, to which the plan of bulk shipment may be experimentally applied.

Mr. Seward is expected back in season to take part in the anniversary celebration of the admission of California into the Union, which takes place on the 9th of September. On his return he will be presented, by the Pioneers, with a thousand dollar cane.

Work at the Foundries.

Notwithstanding the general cry of dull times, there is still a noticeable amount of work going on at the various foundries throughout the city. The mines are by no means at a standstill, and so long as our quartz mills are pounding away upon the precious *ore*, just so long must the foundries keep them supplied with stamps, boilers, engines, and all the little etceteras which go to make up a complete mill. Our numerous manufacturing operations also furnish a large and rapidly increasing amount of work for the foundries and machine shops. We give below the substance of a few notes taken during a two-hours' ramble, the past week, along First and Fremont streets:

The Union.

There are now about 150 men employed at this foundry; and bustle and activity prevails in every department of these extensive works. Locomotive building appears to be quite a specialty here. They have just sent off a fine locomotive for the Virginia City and Truckee road; have another all ready to leave the shop, and a third, on which the workmen are just commencing. They are named respectively the Lyon, Ormsby, and Storey--counties of the State of Nevada. The two first have 14-inch cylinders with 22-inch stroke; the last will have 16-inch by 24. They are built with six driving-wheels forty inches in diameter, with single leading trucks or bogies--wheel base of engine 9½ feet. These machines have all been made in a most thorough and substantial manner, and are designed for their especial work, upon short curves and 116 foot grades.

This foundry is just shipping a large amount of quartz mill machinery for the Washington mine, Amador County, consisting of an engine 14 by 30, with Scott & Eckert's cut-off, a 60-inch tubular boiler, sixteen feet in length, with fifty-four 3¾-inch tubes. The mill consists of three batteries of five stamps each, with a Blake's crusher. A set of hoisting gear also accompanies the same.

They have also just shipped four boilers, with furnace fixtures complete, for the Consolidated Chloride Flat Company of White Pine—tubular boilers 54 in. diameter, 16 feet in length; also a 44-inch tubular boiler for Marysville.

They are building a mill which is to form an addition to the Hornitos Valley mill, and which will consist of twelve stamps, two Banx's Pans, four Hendy and one Hungerford concentrators, a Blake's crusher, shafting, etc.; also hydraulic pipe, etc., for a turbine wheel for the Los Gatos flouring mill, in Santa Clara County. The iron work for the Harrison street bridge in this city, consisting of truss rods, bolts, castings, washers, etc., are also being prepared at this foundry. The usual amount of general jobbing is being done.

The Ætna.

This, though one of the most recently established of our foundries, we are pleased to note gives evidence of prosperity and enterprise. At nearly every visit we make there, we observe an increased area of working room has been added since our previous call. This is one of the most lively establishments of the kind in the city. Among the different pieces of machinery, upon which the workmen were engaged, we noticed one which was a matter of considerable interest, as calling to mind some of the events of California's early history. The engine of the old Constitution, one of the first of the Panama line of steamers, has been unearthed from some old storehouse, where it has been lying amidst dust and rubbish for ten or twelve years, or ever since that steamer was sold. Under the transforming operations of skillful workmen it is being so made over and repaired, that it will soon come out nearly or quite as good as new, and will hereafter do duty on a tugboat at the mouth of the Columbia River. The boat is now being built by A. M. Simpson, at Oakland Point.

This foundry company is also building a set of sawmill machinery for a new mill, which is being put up near Astoria, on the Columbia River. They are also engaged upon the iron work for the extension of the Occidental Hotel, which is soon to occupy the present vacancy in the block on Montgomery between Bush and Sutter streets. This work consists of columns, pilasters, cornices, etc. The extension is to be of the same construction as that already in existence, and when completed, this elegant hotel will occupy the entire Montgomery street front of the above named block.

The iron work for the lighthouse recently ordered to be erected at Point Arenas, is being made at this foundry. The manufacture of Varney's pans has recently been transferred to this establishment. We noticed a large quantity of general work in progress, in every direction about the foundry.

An interesting feature has recently been introduced at this foundry, that of photographing all the machinery as fast as it is turned out. The conveniences and utility of such a system, must be apparent to every machinist; and is such as has secured its very general introduction into Eastern shops. The Ætna, we believe, was the first to introduce it as a regular thing, on this coast. The artist in charge of this department is a younger brother of the two Hanscom proprietors; and is also himself a regular employé in the establishment.

The Miners'.

This establishment, which has recently been closed out by its former proprietors, has now been started again on the coöperative plan. The coöperatives are some sixteen in number, and propose to manufacture all kinds of machinery, castings, etc., as heretofore. This move forms the only true solution to the antagonistic questions between labor and capital. In coöperative associations the laborers get whatever they earn, over and above a fair interest on the necessary investment; and as every man is interested in sharing the profits, so everyone is equally interested in putting in time to the best advantage, and turning out work in the best manner. When such establishments are brought to bear against capital, labor must find its level, and capital be shorn of its power to oppress labor. Strikes, and labor combinations to sustain them, are in every way demoralizing and hurtful, while coöperation is elevating and stimulating to industry. Mr. J. L. Moulthrop is Manager, and Mr. J. McLure Superintendent, of this new coöperative enterprise. We trust the association may prove a success. We shall refer again to our notes next week.

The Daily Fair Press.

The privilege of publishing a daily paper at the Mechanics' Pavilion during the coming Fair, has again been awarded to the proprietors of this paper, and we propose to give to the visiting public a still more readable and interesting paper than any which has preceded it. As an advertising medium, the *Fair Press* has always been popular, as it is distributed *gratis* to all who desire to "reach for it." Parties wishing to advertise should speak early.

THAT MEAT SHOWER.—The two acres of liver and "lights" is already reduced to 200 square feet. Upon this were visible several spatterings of blood and a few pieces of meat. A Los Angeles subscriber writes the *Alta* as follows: "Old Californians state that it is caused by the California vultures, which, having gorged themselves with dead horse and risen high in the air, eject it from their stomachs either from sickness or in battle with the eagle. They have frequently been seen to do this."

Mining Items in Brief.

NEW MINING REGION.—A prospecting party has recently returned, says the Colorado *Register* of June 15th, from a trip to the southwest, and near the southern fork of the Colorado river and the upper waters of the Arkansas. They report the discovery of a rich mineral region, and bring back samples of coarse gold. The locality is said to be 250 miles from any of the ordinary routes of travel. What it was thought might prove good diggings were found along an extent of fully 100 miles of territory. Gold-bearing quartz veins were found in great numbers, and one in particular of mammoth proportions, which was traced for several miles. Mr. Bond, the head of the party, thinks that the best mines in Colorado will be found in that region. The Indians are somewhat troublesome.

QUICKSILVER AT REESE RIVER.—Quicksilver is reported to have been found in the Eureka District, Reese River. It is found both native and in the form of cinnabar. Globules of pure quicksilver are seen standing in the crevices of the rocks, when they are exposed or near the surface.

GOLD DISCOVERIES are reported on Lewis river, four miles from Vancouver. Good reports are also received from the Umpqua river, in Douglass county, Oregon. Quartz has been found, producing specimens of very great richness.

A NEW GOLD BEACH is reported as having lately been discovered at Chehalis Point, Gray's Harbor, Washington Territory. Quite a number of persons are already engaged there with a number of sluices, at work upon the sands lying above the summer tides. The miners are somewhat reticent about what they are making; but it is thought they are doing well. The gold is reported as being round and heavy, therein differing from the light flaky gold of the beaches further south, on the Oregon and California Coast.

MINING DITCH IN OREGON.—A force of 700 Chinamen has arrived and been set to work on the Burnt River mining ditch in Eastern Oregon. It is said that this work will open up an extensive region to profitable mining enterprise.

ORE FROM THE COPE DISTRICT.—Six teams loaded with ore from the mines in the newly discovered Cope district, recently arrived at Elko on its way to this city, to be worked.

COPPER MINING IN FRESNO.—Twenty-five men are employed at the Buchanan Copper mine, in Fresno county, and taking out about eighteen tons of ore a day. The main shaft is 140 ft. deep, with a ten foot vein at the bottom. The company is in a flourishing condition, and a standing evidence that the copper interest is not entirely dead on this coast.

PLUMAS COUNTY contains twenty-six quartz mills.

NEW GAS MACHINE.—Mr. B. Sloper, of Chicago, who has recently patented a hydro-carbon gas machine, exhibited the same to a small party at the office of Fuller & Co., No. 109 Montgomery street, last evening. The apparatus, suitable for five or six burners, was contained in a cylinder nine inches in diameter and eighteen inches high upon a table. The light from a two-foot burner attached to the machine gave twice the amount of light of a six-foot burner supplied from the city gas works. The flames from the machine were nearly white, and sufficiently bright to enable the eye to readily discern colors. It is estimated that gas can be manufactured in this city for about $2.50 per 1,000 feet,—cheap enough to save the price of the machine in a short time. The apparatus will remain on exhibition at the same place for a few days, and we shall probably be able to speak more fully and definitely concerning it soon.

A MOUNTAIN IN LABOR.—Late accounts from Ball Mountain, near Romney, New Hampshire, report that protuberance, so well known to tourists, as giving signs of uneasiness. It has begun "to rumble." A live volcano in that region would prove a greater attraction than the sea serpent to Nahant.

THE SUEZ CANAL.—The formal inauguration of this great work will take place on the 17th of October next; but it will be ready for use by the first of the same month.

The Mining Interest—The Labor Question.

Mr. A. B. Paul, who has recently spent a week or two in Tuolumne County, informs us that the mining interest in that county, as a whole, is prosperous. Of the quartz interest in particular, he furnishes the following:

Hesley's mill of ten stamps has been running all the season. App's mill of ten stamps is being enlarged to twenty-five. Knas has just completed and set to work a new 10-stamp mill. The Golden Rule incorporated Company (has been a dividend paying company for a long time) has fifteen stamps. Pennsylvania Company of ten stamps is being increased to twenty. Rosencranz's mill, ten stamps, is running, and paying. Reed's, five stamps, Moony's, four stamps. McCurdy's four arastras are also active and paying, to say nothing of hundreds of lodes that can be made paying mines. The mining interest in Tuolumne may be taken as a fair index of the State generally.

Mr. Paul has also furnished the *Bulletin* of Thursday with some comments on the causes of the present general depression of business in the mining counties, where he shows that such depression is not due to any lack of prosperity in the mining interest; but to the general lack of capital to develop and population to fill up the county; and this lack of capital arises mainly from the high rate and unsettled condition of the labor question in this State. He thinks that before a reform can be effected, there must be a breaking up of old ideas—that the cost of traveling must come down, interest must come down, commissions must come down. Our ideas generally, of cost, must come down, *then* labor will come down. It will do no good to bring labor down and keep everything else up. "The war, as it now stands," says Mr. Paul, "is against labor—that must come down, they say. But why should labor come down and nothing else," asks Mr. P. Many of those who are continually crying out against the high price of labor, forgetful that nearly everything else is quite as high, would do well to stop and consider whether there may not be a beam in their own eyes. Let us all come down together, and the fall will be easy.

MECHANICS' INSTITUTE—RE-INCORPORATION.—A meeting of the Mechanics' Institute was held on Saturday evening last for the purpose of taking into consideration the propriety of the reincorporation of the Institute. The President, A. S. Hallidie, Esq., after calling the meeting to order, briefly stated the object for assembling, and read the legal opinion of M. M. Estee, advising the calling of a meeting for that purpose.

The Secretary then read the resolution of the Institute, calling the meeting, when Mr. Davis introduced the following resolution, which was adopted:

Resolved, That the Board of Directors of the Mechanics' Institute are hereby directed and authorized to at once reincorporate the Mechanics' Institute of the City of San Francisco, in accordance with the Act of the Legislature, entitled "An Act to Provide for the Formation of Chambers of Commerce, Boards of Trade, Mechanics' Institutes, and other kindred Protective Associations," approved March 31, 1866.

There being no other business, the meeting then adjourned.

STATE FAIR AGENT.—Mr. H. D. Dunn has been appointed agent for the Sacramento State Agricultural Fair, for this city and vicinity. Mr. Dunn's office is at 508 Battery street, where persons desirous to exhibit goods or machinery may find all the necessary information. The Fair commences on the 6th of September.

LONG TRIP FOR A LOCOMOTIVE.—Two locomotives for the C. P. R. R. arrived in Sacramento, on Monday of last week, by rail from the Schenectady (N. Y.) Locomotive works. Sixteen days were occupied in coming through.

Engineering.

The Tunnel under the English Channel.

We find the following in *Engineering* for July 9th:

That an address signed by so many powerful and influential names, has been presented to the Emperor of the French; that two of our leading engineers have advanced themselves as the advocates of the project; that in all probability the report of the French Commission will be supplemented by another from an English Committee; all these are facts which show that the work lacks neither patronage, nor energy, nor skill, to bring it to a successful issue, if nature has set up no insurmountable barrier. Mr. Hawkshaw was the first engineer to devote much time to the consideration of the project, and the only engineer who has gained as the result of a lengthened and costly survey, and a thorough exploration by means of borings, as certain a knowledge of the material through which the tunnel will have to be driveu, as it is possible to obtain. Mr. Hawkshaw's conclusions deduced from his observations are as follows :

1st. That there is a reasonable prospect that the work can be accomplished, but that it would be improper to deny that it is attended with a certain amount of risk.

2d. That this risk is limited to one contingency, viz: the possibility of sea-water finding its way by some unforeseen fissure into the workings in quantity too great to be overcome. Apart from this risk, tunneling in chalk is easy and rapid, and the execution of a tuunel of the length of the one under consideration is only a question of time and expense.

3d. There seems to be no reason to assume that the tuunel would cost more than ten millions sterling, or that it could not be completed in nine or ten ycars.

4th. The question of risk would be fully solved by sinking laud shafts on each coast, and driving the preliminary driftways. This portion of the work being safely accomplished, the remainder would be of an ordinary character.

5th. The possible loss would be measured by the cost of this preliminary work, which we estimate at one million and a half, and which could not exceed two millions, or say one-fifth of the whole cost of the tunnel.

6th. That this risk should be undertaken by the Government of France and England, if after consideration they deem the importance of the work and the probability of its completion sufficient to justify them in doing so.

Bridging the Connecticut.—The Board of Engineers, consisting of General C. B. Stuart, General George B. McClellan, and General Q. A. Gilmore, appointed to select a plan for a bridge across the Connecticut River at Middletown, for the "Air-line" Railroad between New York and Boston, and to designate the point at which it shall be built, recently met at the office of the chief engineer of the Air Line, Broadway, New York. The Board occupied the entire day in examining and discussing plans for the proposed bridge, and adjourned without taking final action, in order to visit the workshops where structures of the kind are made, and to examine some of the large iron draws now in use. The bridge is to be of wrought iron, and will be 1248, ft. long with a draw of two openings of 160 ft. each. The whole draw is to be 303 ft. long, and is to opeu and shut in one minute and thirty seconds. The track is to be about 42 ft. above ordinary water mark. The height of the truss is to be 20 ft. The bridge is to be capable of carrying 2 tons to the running foot, beside its own weight, and is to be capable of sustaining a train of locomotives passing over it at the rate of sixty miles an hour. The name of the new railroad of which this bridge is a part, is the New Haven, Middletown, and Willimantic Railroad, and will be opened within a year; the bridge is to be completed in eight or nine months. About forty different plans for the proposed bridge have been submitted to the Board of Engineers, and of these eight or nine have been found to be worthy of serious consideration.

A New Engineering Project.—A New York Journal says: "It is proposed to construct a ship canal from the lower part of our city across the meadows to the bay, thence across Bergen Neck, in almost a direct air line, to the channel of the Hudson River near Bedloe's Island. From the channel to the Bergen Neck shore, the canal will be 300 feet in width, with sixteen feet of water at low tide, or nearly twenty-two feet at high tide; being of sufficient depth to accommodate the largest vessels entering the harbor of New York. Piers will be built on each side of the canal, each 300 feet in width, to be filled in with solid filling of earth and stone. The outer sides of these piers will accommodate ordinary canal-boats and vessels of light draught, for loading or unloading, while the deep water of the canal will furnish wharfage for the largest ships and steamers."

A Test of Peat Fuel.—A trial to test the comparative calorific power of peat fuel was made in the engine room of the N. Y. *Tribune* establishment on July 11th. The two boilers were precisely alike, and in the trial used the same draft. Fires were started at 9 P. M. and the work continued steadily until 4 A. M. Under one boiler ordinary fuel—Lehigh anthracite, chestnut size—was burned, and under the other the fuel prepared by a peat company—each being carefully weighed. Seven hundred pounds of each were consumed, with the same resulting duty in both. This peat fuel is very compact, and in this instance was the non-resinous variety, yielding 10·8 per cent. of ash. The engineer expresses the opinion that, for making steam, it is equal, ton for ton, to the coal commonly used for that purpose.

Another Cable.—A third Atlantic cable is talked of. A New York company has been organized to carry out the project. The *Artisan* says: "The new line will be worked with what are known as 'sounder instruments,'—in other words, with those indicating the letters of the alphabet by sound, instead of the galvanometer system in use on the present submarine telegraphs. Two sets of these instruments have been made in Europe, one of them having been tested through three thousand miles of iron wire. It is thought that the plan of operations of the new company will be made public during the coming autumn."

Postmasters are requested to punctually inform us of the removal of subscribers of the Press from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

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Refers by permission to W. C. Ralston, Cashier Bank of California; Messrs Pioche & Bayerque, Wm. M. Lent, John D. Fry, E. Cahill & Co., A. K. Grim, President Pacific Union Express Co.; John M. Eckfeldt, M. and R. U. S. B. Mint. Hale & Norcross S. M. Co., and the principal mining companies on the Comstock Lode. 25v17-tf

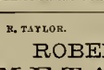
R. TAYLOR. WM. H. TAYLOR.
ROBERT TAYLOR & CO.,
METALLURGISTS.
SMELTING WORKS,
Twelfth street, between Folsom and Howard.
GALVANIZING.
Also, Anti-Friction, Alloys for Journals, Type and Stamping Metals, Tinners and Plumbers' Solder, Etc.
☞The best price given for the most rebellious or refractory ores. Ores and minerals assayed and analyzed.
ISAAC BLUXOME, Agent,
4v18-3m N. E. cor. Washington and Battery streets.

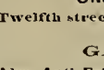
G. W. STRONG,
ASSAYER AND WORKER OF ORES,
No. 10 Stevenson street, near First, San Francisco.
Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms.
14v15qr.

Professional Cards.

J. S. PHILLIPS, M. E.,
CONSULTING ENGINEER,
Examiner of Mines, etc.,
423 Washington street..... .....San Francisco.
(Having had 33 years' experience in Europe and America,) supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

GEORGE B. ELLERY,
Practical Mining Engineer,
TREASURE CITY,
White Pine..... .....Nevada.
2v19tf


DR. N. T. WHITCOMB,
Dentist,
No. 205 Third street, up stairs, San Francisco
Teeth filled with fine gold, artificial bone, and platina. All Plate Work made and repaired of the best material, at the shortest notice, and warranted.
None cheaper and better on this coast—call and examine Specimens
North Beach and South Park cars pass the door.
3v19-3m N. T. WHITCOMB.

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco.
2tv15-1y

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
540 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
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Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
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GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
418 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

Trades and Manufactures.

WM. BARTLING. HENRY KIMBALL.
BARTLING & KIMBALL,
BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers.
505 Clay street, (southwest cor. Sansome),
15v12-3m SAN FRANCISCO.

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
S. E. Corner of Mission and Fremont sts.,
6v14tf SAN FRANCISCO

SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
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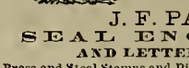
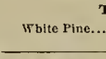
J. J. JONES,
CARPENTER and BUILDER,
No. 324 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
7v18tf

W. C. CAMPBELL,
PATTERN AND MODEL MAKER,
No. 20 Fremont street, over Phœnix Iron Works, San Francisco.
Particular attention given to MODELS for the Patent Office Brands and Pattern Letters Cut. 4v18mtf


J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

DESKS AND OFFICE FURNITURE.
JOHNSON & BEST,
Manufacturers of all kinds of
Desks and Office Furniture,
717 Market street, near Third, up Stairs.
Warerooms, 413 Pine street, Russ Block,
A large variety of Desks always on hand; all kinds of Office Furniture and Cabinet Work made to order.
18v17qr

Pacific Chemical Works.
SULPHURIC ETHER,
SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS.
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

Pacific Mail Steamship Co's
STEAMSHIPS FOR
NEW YORK, JAPAN AND CHINA.

LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at 11 o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.
On the 10th, 17th and 30th of each month that has 30 days.
On the 10th, 18th and 30th of each month that has 31 days.
When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding; when the 17th falls on Sunday, they will leave on the Monday following.
Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.
Departure of the 17th or 18th is expected to connect with the French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America. Through tickets can be obtained.
The following Steamships will be dispatched on dates as given below:
August 9th—SACRAMENTO.....Capt. W. H. Hudson, Connecting with ALASKA, Capt. Gray.
August 18th—GOLDEN CITY.....Capt. Wm. F. Laidlge, Connecting with HENRY CHAUNCEY, Capt. Connet.
August 30th—MONTANA.....Capt. E. S. Farnsworth, Connecting with ARIZONA, Capt. Maury.
Passengers berthed through. Baggage checked through. One hundred pounds allowed each adult.
An experienced Surgeon on board. Medicine and attendance free.
These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.
Through Tickets to Liverpool by the "Inman" and "National" Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco, where may also be obtained orders for passage from Liverpool or Southampton to San Francisco, either via New York or St. Thomas—if desired an amount of £10 to £20 will be advanced with the above orders. Holders of orders will be required to identify themselves to the Agents in England.
For Merchandise and Freight to New York and Way Ports, Company's Form of Bill Lading only used.
No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.
The Steamship JAPAN, Captain J. H. Freeman, will be dispatched for YOKOHAMA and HONGKONG on SATURDAY, September 4th, 1869, at noon connecting at YOKOHAMA with the steamer NEW YORK for SHANGHAI. Shippers of freight to China or Japan are requested to mark on each package its destination.
For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.
OLIVER ELDRIDGE, Agent.

Register your Letters containing money addressed to us, or we can not be responsible. Remittances by Express must be in packages, prepaid. When practicable, it is best to remit by draft, or order, on some San Francisco bank or firm.

MEUSSDORFFER,

HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL,

535 and 537 Commercial street.....San Francisco.
125 J street.....Sacramento
Corner of D and Second streets.....Marysville.
72 Front street.....Portland, Oregon.

Our wholesale House, 628 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 23v16-3m

Blake's Patent.

THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's

Patent Steam PUMP

It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted to operate under all circumstances. Send for a circular. W. O. M. BERRY & CO., 114 California St., San Francisco, Cal.

Office of California Powder Works,

San Francisco, July 15, 1869.

NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

JOHN P. LOUSE, Secretary.
5v19-3m 314 California street

Pump Leather.

The attention of MINING COMPANIES, and others requiring a superior article for Hydraulic purposes, is invited to the heavy Oaked Tanned Pump Leather, manufactured and prepared expressly by the undersigned.

TRADE SANTA CRUZ TANNERY E. JONES & Co MARK.

Constantly on hand and for sale by

GRAY, JONES & CO.,

Depot of the Santa Cruz Tannery,

418 Battery St., San Francisco.

29v11-1y

THE GIANT

POWDER COMPANY

Is now prepared to fill all orders for

GIANT POWDER,

Put up in Boxes, either in Bulk or in Car tridges.

General Agents,

BANDMANN, NIELSEN & CO.,

25v16-3m 210 Front street, San Francisco.

WINDMILL

For Sale Cheap!

Entirely New and of Modern and Approved Style.

For particulars apply to or address this office.

Mining Secretary.

THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.

Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.

J. M. BUFFINGTON,

Room 37 New Merchants' Exchange, California street, San Francisco 17v15 tf

A Long Desired Article

FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using

CAMILLE CHAMPOO,

which not only does away with the poor soap so offensive to use, and so injurious to the hair, but it cleans the head, strengthens and beautifies the hair, preserves the color and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERTON & LUELLING, 723 Mission street, San Francisco, Cal.

HEATHFIELD & BOGLE, Wholesale Druggists, 206 and 208 Battery street, San Francisco, sole Agents for the Pacific Coast. 24v18-3m

Blanks, Blank Mining Books

Constitution and By-Laws

— FOR —

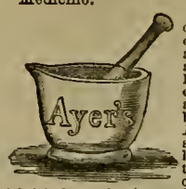
Mining and Prospecting Companies

Elegantly printed, with care and dispatch, at the office of the Mining and Scientific Press.

Orders from the interior faithfully attended to.

Ayer's Cathartic Pills,

For all the purposes of a Laxative Medicine.



Perhaps no one medicine is so universally required by everybody as a cathartic, nor was ever any before so universally adopted into use, in every country and among all classes, as this mild but efficient purgative *Pill*. The obvious reason is, that it is a more reliable and far more effectual remedy than any other. Those who have tried it, know that it cured them; those who have not, know that it cures their neighbors and friends, and all know that what it does once it does always — that it never fails through any fault or neglect of its composition. We have thousands upon thousands of certificates of their remarkable cures of the following complaints, but such cures are known in every neighborhood, and we need not publish them. Adapted to all ages and conditions in all climates; containing neither calomel or any deleterious drug, they may be taken with safety by anybody. Their sugar coating preserves them ever fresh and makes them pleasant to take, while being purely vegetable no harm can arise from their use in any quantity.

They operate by their powerful influence on the internal viscera to purify the blood and stimulate it into healthy action — remove the obstructions of the stomach, bowels, liver, and other organs of the body, restoring their irregular action to health, and by correcting, wherever they exist, such derangements as are the first origin of disease.

Minute directions are given in the wrapper on the box, for the following complaints, which these *Pills* rapidly cure; —

For **Dyspepsia** or **Indigestion, Listlessness, Languor** and **Loss of Appetite**, they should be taken moderately to stimulate the stomach and restore its healthy tone and action.

For **Liver Complaint** and its various symptoms, **Bilious Headache, Sick Headache, Jaundice** or **Green Sickness, Bilious Colic** and **Bilious Fevers**, they should be judiciously taken for each case, to correct the diseased action or remove the obstructions which cause it.

For **Dysentery** or **Diarrhœa**, but one mild dose is generally required.

For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins**, they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.

For **Dropsy** and **Dropsical Swellings** they should be taken in large and frequent doses to produce the effect of a drastic purge.

For **Suppression** a large dose should be taken as it produces the desired effect by sympathy.

As a *Dinner Pill*, take one or two *Pills* to promote digestion and relieve the stomach.

An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.

DR. J. C. AYER & CO., Practical Chemists,

LOWELL, MASS., U. S. A.

Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. Mcdonald & Co., Sacramento. General Agents. 25v18ow4m

MECHANICAL AND ARCHITECTURAL

Drawing School

— FOR —

APPRENTICES.

MR. FREDERICK HELLEKT,

An experienced Draughtsman and Teacher, has opened an Evening School at No. 414 CLAY STREET (same entrance as the Mining and Scientific Press Office), where he is giving thorough instructions in DRAWING to apprentices who are inclined to self-improvement. His terms are moderate and within reach of the humblest apprentice; and we are pleased to say that the enterprise is meeting with success. 1v18.tf

Wonderful Invention!—To Housekeepers!

NEW METHOD OF

WASHING CLOTHES

WITHOUT LABOR.

JOHN REIST'S Celebrated Patent Automatic

CLOTHES WASHER AND BOILER.

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S. Patent Office, November 6, 1868. See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco,

Dealer in Stoves and Tinware.

25v1 3m 67 and 69 Fourth st., bet. Mission and Jessie sts.

California Steam Navigation COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE
" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE.....
" CORNELIA.....CAPT. W. BROMLEY
" JULIA.....CAPT. E. CONCKLIN.

Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

E. M. HARTSHORNE, President.

13v12

New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the patient has at once can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever*; Dyspepsia in all its ages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever*; Gout, *when the patient is still able to walk*; Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

HO TEAMSTERS!

CONTINUE TO

USE HUCKS & LAMBERT'S

CELEBRATED

H & L Axle Grease,

To which you have given so decided a preference for the last

FOURTEEN YEARS,

It is the only reliable article

IN THE MARKET

Every care will continue to be used to sustain the high reputation the H & L Axle Grease, has so long and justly attained.

☞ Be sure and ask for the H & L brand, and see that the

TRADE MARK H & L

IS ON THE COVER OF THE PACKAGE

NONE OTHER IS GENUINE.

FOR SALE IN EVERY STATE IN THE UNION.

To Quartz Mining Companies.

To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—

One Steam Engine, 60-horse power, made by Burden, Brooklyn, New York.

Two large Boilers, in complete order.

One Eight-stamp Battery.

One Chile Mill.

One Cornish Lift-Pump, 6 inches, of superior make and finish.

280 feet of 5 inch Iron Suction Pipe.

One large Water Tank.

And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.

The Company having ceased operations intend selling off their effects as speedily as possible.

For Particulars as to price, etc., address, by letter or otherwise, E. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or E. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J Bluney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

REMOVED.

The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. 118, 120 and 122 FRONT STREET, one door from southeast corner of California street.

July 14, 1869. ELAM & HOWES.

4v19-3m

THE CHARLES HARKNESS

Patent Wax Candles,

Have now an established reputation on this Coast. Their uniform quality, much superior to any Adamantine Candles, is

Well Known to Miners.

They burn longer and better than other kinds, and are really the most economical Candles in the market.

FREEMAN, SMITH & CO.,

110 California street.

Manufacturers' Selling Agents. 21v18-3m

OCCIDENTAL

Insurance Company,

OF SAN FRANCISCO.

Cash Capital, - - - - - - - $300,000

GOLD COIN.

Office S. W. corner of Montgomery and California streets.

Fire and Marine Insurance.

All Losses paid in U. S. Gold Coin.

CHR. CHRISPIANSEN, President

B ROTHSCHILD, Secretary 20v17-3m

Mining Property for Sale.

A Two Thirds Interest

OF THE

Golden Rule Mining Company's Claims and Mill,

Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 300 feet. A force of thirteen men only are required to keep both mill and mine running regularly.

On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which fact goes to prove that a heavy deposit of ore was once contained in the croppings of these slutes, which, by all former and present theories of deep mine workings, came from below, indicating that when sunk upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.

This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.

The last level, 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $1 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.

Now I propose to sell two thirds of this valuable property for $16,000, cash: and any party who desires to purchase a property of this kind—which theory has proven that it requires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to inform him what he may think proper of what has been here stated.

For any further particulars, direct by letter to Wm Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.

22v18tfqr WM BOSWORTH.

PATENT OFFICE REPORTS, from 1843 to 1847, MECHANICAL, are wanted for duplicate copies at this office. Parties having them for sale will please state price, and address DEWEY & CO., Mining and Scientific Press office San Francisco.

Company Transactions.

New Incorporations.

La Grande Laundry Co.—Aug. 5th. Capital stock, $50,000; 500 shares. Trustees: Wm. H. Bovee, Edward Hall, Henry K. Moore, C. B. Putnam and M. A. Lynde.

Water Front Tide Land Co.—Aug. 7th. Capital stock, $996,000; 3,320 shares. Trustees: C. C. Weble, S. P. Christy, C. H. Burtou, Wm. H. Sharp, A. W. Bowman, J. C. Horan and M. P. Jones.

Blue Mountain Tunnel and Lode M. Co.—Aug. 10th. Capital stock, $280,000; 14,000 shares. Trustees: R. R. Provines, T. Wand, R. George, V. M. Foucault and Geo. Parker.

Dime Savings Bank.—Aug. 10th. Capital stock, $100,000; 1,000 shares. Trustees: J. Fruchnicht, O. W. Himrod, W. F. Herle, John G. Nelson, G. G. Webster.

Meetings, Elections, Etc.

Rathbun S. M. Co.—White Pine. Aug. 2d. Trustees and officers: B. F. Sherwood, President; Nathaniel Page, Vice President; Smyth Clark, E. F. Child, and S. Linktone, Trustees. E. A. Godfrey, Secretary.

Columbus M. Co.—White Pine. Aug. 2d. Trustees: J. Milbuyn, F. Henderson, John F. Miller, E. P. Bucklin aud Edmund Marks.

Ben. Franklin H. A.—Aug. 5th. President, Gustavns Wetzlar; Secretary, Louis Kaplan; Treasurer, Gustavns Sturzinegger; Trustees: John Brnger and H. Winkle.

Concordia H. A.—Aug. 5th. President, J. D. P. Teller; Secretary, Louis Kaplan; Treasurer, S. B. Watson; Trustees: S. B. Collins and Henry Schwartz.

Eberhardt Co.—Aug. 7th. Edward Applegarth, President; Frank Drake, Vice President; David Mitchell, Secretary; E. R. Sproul, Treasnrer. Trustees: Captain Frank Drake, Edward Applegarth, E. R. Sproul, E. X. Willard and David Mitchell.

San Francisco Yacht Club.—Aug. 7th. Henry B. Platt, Commodore; J. L. Eckley, Vice Commodore; R. L. Ogden, Treasurer; William Brooks, Secretary; J. C. Kelley, Measnrer.

German Savings and Loan Society.—Aug. 7th. Trustees: L. Gottig, F. Roding, George H. Eggers, Jacob Guudlach, F. Koster, H. Schmiedell, E. Kruse, Charles Kohler, M. Mendheim. L. Gottig. President; L. L. Arnold, Secretary; John R. Jarboe, Attorney.

St. Francis' Literary Society.—Aug. 9th. President, R. J. Tobiu; Vice President, J. H. Ryan; Secretary, M. J. McGrath; Treasurer, Mrs. E. G. Lightner; Librarian, Mrs. J. Conroy; Committee on Library, Mrs. E. A. Adams, Mrs. E. G. Lightner, Mrs. M. J. Conroy.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

For the Week Ending August 3d.

Printers' Galley Rest.—John M. Murphy, Olympia, Washington Territory.—93,216.

Flooring Clamp.—David Nevin, Boulder City, Colorado Territory.—93,217.

Lady's Chemise.—R. L. Jones, Sacramento, Cal.—93,390.

REISSUE.

Gymnastic Swing.—Alonzo P. Payson, San Francisco, Cal.—66,038. Dated June 25, 1867; reissue 3,582.

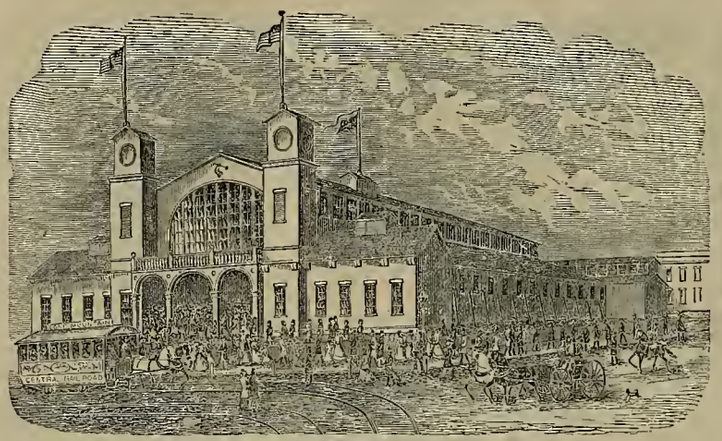
DESIGN.

Trade Mark.—Henry Ronndy, San Francisco, Cal., assignor to Califoruia Mariue Mctallic Paint Co., same place.—3,599.

Still Burning.—It is said that the fire on the Comstock ledge is still slowly burning. It is confined, however, to a portion of the mine which has been completely worked out, and is so walled in that it can neither spread, or at all interfere with any part of the working operations. The fire will probably continue until it ceases for lack of fuel.

The Mechanics' Fair Daily Press.

PRINTED AND CIRCULATED FREE IN THE PAVILION.



[COMMENCING SEPTEMBER 14TH, 1869.]

Over 100,000 Intelligent Individuals will read and preserve copies of the Fourth Volume of the Mechanics' Fair Daily Press.

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Eight pages, profusely illustrated, and furnished free to every Exhibitor and Visitor during the season of the Fair—from four to five weeks. Copies sent abroad to friends everywhere, containing description of the Fair.

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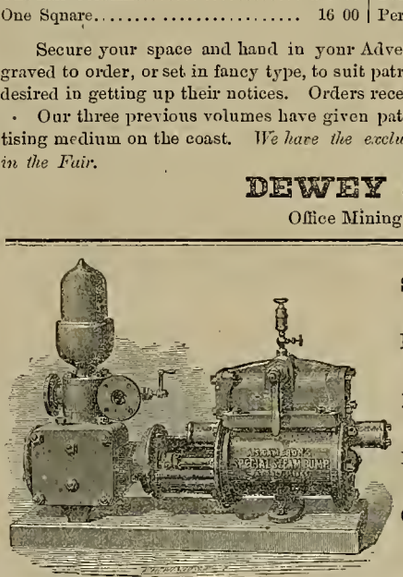
One Square	16 00	Per line—one insertion	25

Secure your space and hand in your Advertisements early. Advertisemeuts Engraved to order, or set in fancy type, to suit patrons, who will be rendered all assistance desired in getting up their notices. Orders received through agents or at the office.

Our three previous volumes have given patrons the best satisfactiou of any advertising medium on the coast. *We have the exclusive privilege for newspaper advertising in the Fair.*

DEWEY & CO., Publishers,
Office Mining and Scientific Press, 414 Clay street.



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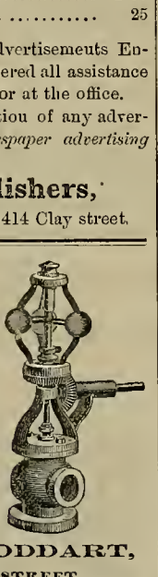

DAVID STODDART,
114 BEALE STREET.

Mountain Town Sites—Grass Valley. Commissioner-General Wilson has affirmed the decision of the Sacramento office that the donation of lands for town sites cannot extend beyond the limits of the corporation, and holds that the law positively prohibits the sale of mineral lands for town purposes. The Commissioner declares that before the application of Grass Valley can be decided, good and sufficient testimony will be required on the following points:

1st. As to the actual extent and area of the land covered by the town improvements which is within the incorporated limits of said town of Grass Valley.

2d. As to the mineral character of the land embraced within said corporate limits, and whether such lands are more valuable for purposes of trade and agriculture, or as mineral lands.

The Commissioner says the entry of Nevada town site was granted upon evidence that the mines had been mostly worked out and that the land was more valuable for trade and agriculture than for mining.

Chicago Visitors at Grass Valley.—Several members of the Chicago commercial party visited Grass Valley on the 7th inst., to take a look at the mines before leaving for home. "They received,"—says the *Union*,—"a cordial greeting from a number of our townsmen, and in the afternoon accepted an invitation from Capt. Lee to visit the fine works of the Empire mine. Several carriages, containing the party and several citizens of Grass Valley, visited first the Empire mine and afterward the Eureka mine, where they were hospitably received by Mr. William Watt. They were much interested in the details of quartz mining, and were undoubtedly impressed with the richness of the gold fields of California, and particularly of this, the most famous quartz mining locality of the State."

Patent Office Reports, from 1843 to 1847, Mechanical, are wanted for duplicate copies at this office. Parties having them for sale will please state price and address DEWEY & CO., Mining and Scientific Press office San Francisco.

Returned.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. Howland.

Co-Operative Union Store.—This is becoming one of the most useful institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco 24v18-4w

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Asiatic Cholera.—The Strongest Proof of Intrinsic Merit.—Dear Sir: I ought to have acknowledged long ago the box of Pain Killer you had the goodness to send me. Its coming was most providential. I believe hundred of lives were saved, under God, by it. The Cholera appeared here soon after we received it. We resorted at once to the Pain Killer, using as directed for Cholera. A list was kept of all to whom the Pain Killer was given, and our native assistants assured us that eight out of every ten to whom it was prescribed recovered. It has proved an incalculable blessing to multitudes of poor people throughout all this region. Our native preachers are never willing to go out on their excursions without a supply of the Pain Killer. It gives them favor in the eyes of the people, and access to families by whom otherwise they would be very indifferently received. Believe me, gratefully and faithfully yours, J. M. JOHNSON, Missionary, Swatow, China.

The Pain Killer is sold by all Druggists and dealers in Family Medicines.
REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents. aalm

Central America Mahogany has been introduced here by Hobbs, Gilmore & Co., being found cheaper than the Eastern.

New Advertisements.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.
THOMAS MOONEY, President.
August 2, 1869. 6v19 1m

GIVEN AWAY.

To extend their circulation in California, the proprietors of

TILTON'S
JOURNAL OF HORTICULTURE

Will send their Magazine (devoted to Fruit, Flowers and Vegetables)

FREE TO ANY ADDRESS.

Those parties desiring it, with a view to becoming subscribers if they are pleased with it, can address
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7v19.3w Boston, Mass.

A NEW
Gold Metal.

THE GOLD METAL WATCHES

Now being introduced by

C. E. COLLINS & CO.,

No. 629 Washington Street,

SAN FRANCISCO,

Surpass anything yet made in the way of an Imitation Gold Watch. They wear well, and keep good time.

The Ladies' Watches cost $10, $15 and $20 each.
The Gentlemen's cost $15 and $20 each.
Chains, from $3 to $6 each.

Can be sent by Express to be paid for on delivery.

C. E. COLLINS & CO.,
No. 629 Washington street, San Francisco.

P. S.—Where six watches of the above are ordered at one time, we will send one extra, free of all charges.
We also deal in the finest Gold and Silver Watches, Watch Materials, etc. Send for circulars or prices.
7v19 4t

NELSON & DOBLE,

AGENTS FOR
Thomas Firth & Sons' Cast Steel,
MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,
13 and 15 Fremont street, near Market, San Francisco.
10v14qr

MANUFACTURING
Room to Let.

We have a large room, about 18 by 36 feet, in second story at 414 Clay street, near Sansome, which we will rent very low, suitable for printing or manufacturing purposes.
DEWEY & CO.,
Publishers Mining and Scientific Press, 414 Clay st.

Information for Inventors and Patentees.

AN EXTRACT

From the American and Foreign Patent Agency Circular of the Mining and Scientific Press, Dewey & Co., Publishers.

Hints to Inventors.

The assignee of every invention may have the patent issue to him directly, when he is the purchaser of the entire interest.

A patent may issue in the joint names of the inventor and assignee, the inventor himself being one of the assignees.

The application must be made by the actual inventor, if alive; but if the inventor be dead, it may be made by his heirs or executors.

A working model is always desirable to enable the office to determine its precise operation. The name of the inventor and also of the assignee, if assigned, must be fixed upon it in a permanent manner.

What is really embraced in the original invention, and so described or shown that it might have been embraced in the original patent, may be the subject of a reissue.

The mere fact of prior invention abroad will not prevent the granting of a patent, unless the invention had been described in some printed publication.

When the patent is applied for in the United States, after being obtained abroad, it will extend only fourteen years from the date of the foreign patent.

Every assignment should be recorded in the Patent Office within three months from its date.

If old materials and old principles are used in a state of combination to produce a new result, the inventor may obtain a valid patent for such result.

When an application has been rejected, the inventor may manufacture his invention for two years, with the privilege of renewing his application within that time, if he so desires.

The inventor or inventors must sign the petition and claims, the latter to be attested by two witnesses, also take the required oath before some authorized person.

A partner, who is not an inventor, cannot sign a joint application without committing perjury.

If the inventor fails to pay his last Government Fee within the time prescribed after the patent is allowed (six months), he may, at any time within two years, renew his application by paying the first fee again, and thus finally obtain his patent.

Models may be withdrawn from the Patent Office by inventors when their cases are rejected.

The actual manufacture, sale, or use of an *article* may infringe—but the sale or purchase of *patent rights* is not infringement.

A patent right is personal property, and is assignable, but cannot be seized and sold on execution.

Small agents swarm about the Patent Office block at Washington, ready to receive the unwary applicant, who determines to go to Washington to prosecute his own claims. Ingeniously-worded and cunningly devised circulars, are showered upon every patentee when his claims are first published, and inventors are led to believe that in future their patents can be secured at very low rates. We have never heard of an inventor, here or in Washington, employing any of these promising letter-senders at anything less than exorbitant prices in the end, for services performed. A majority of the substantial offices in Washington are branch agencies of houses in other cities.

The published rules of the Patent Office say: "The Patent Office cannot respond to inquiries as to the novelty of an alleged invention, in advance of an application for a patent, nor to inquiries founded upon brief and imperfect descriptions propounded with a view of ascertaining whether such alleged improvements have been patented, and if so, to whom; nor can it act as an expounder of the patent law, nor as counselor for individuals." Such information should be sought through intelligent and reliable agents.

Selling Patent Rights.

While we are willing to give our best advice and assistance to worthy inventors, we cannot flatter them with promises to sell their patents. It requires quite a different order of education and talents to obtain patents, from that necessary to make a successful vendor. Those who are adepts at the latter are not apt to be proficient in the former.

Our advice to patentees is to make the value of your inventions known as widely as possible at once, and do your own selling, with such assistance as you can secure among your own acquaintances, and such parties as are thoroughly recommended. Inventors who have a good thing are apt to underrate their own ability in this line until they try.

More valuable patent rights have been sold on the Pacific Coast by reason of the information given of them by illustrations in the MINING AND SCIENTIFIC PRESS, than through any other source. The cost of such illustrations is little in comparison with the satisfaction gained.

☞Our Illustrated Pamphlet, from which the above is an extract, will be furnished free on receipt of postage stamp. Confidential advice given, and every legitimate branch of Patent Soliciting business promptly and faithfully executed, by

DEWEY & CO.,

Publishers Mining and Scientific Press, 414 Clay street, San Francisco.

For One Dollar, Coin, Postage Paid.

QUARTZ OPERATOR'S HAND-BOOK.

—BY—

WHEELER & RANDALL.

San Francisco, 1865.

A cheap and handy book for Quartz Prospectors, Millmen, and Amateur Assayers.

This little work, of 130 pages although partly devoted to a discussion of limited interest to general readers, contains instructions in the WORKING AND ASSAYING OF ORES, AND TABLES FOR REFERENCE, which renders it quite desirable and of frequent service.

Price, $1, coin—$1 30 in currency or postage stamps. For sale by DEWEY & CO.,

1am Mining and Scientific Press, San Francisco.

Important to Assayers.

Crucibles.

The Patent Plumbago Crucible Co.,

Manufacturers of all kinds of

Melting Pots, Portable Furnaces,

CRUCIBLES, and other fire-standing Goods,

Battersea Works, London.

THE MORGAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; change of temperature has no effect on them; stand on the average forty to fifty pourings.

CERTIFICATES:

United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,

Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs A S Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,

A. S. HALLIDIE & CO.,

18v18-9p 519 Front street, San Francisco

PACIFIC

Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

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☞ Orders addressed to PACIFIC ROLLING MILL COMPANY, Post Office, San Francisco, Cal., will receive prompt attention.

☞ The highest price paid for Scrap Iron 9v143m9p

New Mining Advertisements.

Golden Rule Mining Company, Tuolumne County, California.—Regular Bi-monthly dividend (No. 21) of the Golden Rule Mining Company, of Tuolumne County, Cal., of 2½ per cent. per month, on the paid in capital or $10 per share, is this day declared, and payable to the Stockholders on and after the 26th inst. Office, 432 Montgomery street, Room No. 5.

W. BOSWORTH, President.

J. B. RUSSELL, Secretary.

A. S. PHIFER, Superintendent.

San Francisco, Aug. 12, 1869. au14-1t

George Washington Silver Mining Company.

Location of Works: White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the first (1st) day of July, 1862, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
H K Snow	unissued	276	$27 60
J B Scott	unissued	162½	162 25
J J Ryan	unissued	1000	100 00
P A Kahler	unissued	501	50 00
W J Nightingale	32	138	6 90
Geo W Vincent	33	138	6 90
W H Stanley	64 to 66 100-ea	300	15 00
W H Stanley	67, 68 10-ea	20	1 00
W H Stanley	71 to 88 10-ea	160	8 00
A P Voorhees	121	125	6 25
Osgood Hilton	122	125	6 25
J M Brown	127	125	6 25
P A Gord	132	125	6 25

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

TITOS. J. OWENS, Secretary.

Office, No 10 Stevenson Building, San Francisco. jy10

Gleswood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at his office, 418 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-eighth day of September, 1869 to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 418 California street, San Francisco. je12

Hamilton Hydraulic Tunnel and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco; or to M. T. Brewer, Hamilton, Nevada.

Any stock upon which said assessment shall remain unpaid on the tenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. au14

Thunderbolt Mill and Mining Company.—Location of Works: White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the first day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J B Scott	unissued	5829	$291 00
H K Snow	unissued	1110	55 50
C Robinson	unissued	2200	110 00
Catherine Caffrey	3	50	1 75
Geo W Vincent	24	555	13 88
W J Nightingale	25	111	2 78
W J Nightingale	26	111	2 78
W J Nightingale	27	111	2 78
W J Nightingale	28	111	2 78
W J Nightingale	29	111	2 77
H H Scott	73	100	2 50
H H Scott	76	100	2 50
H K Snow	30	120	3 00
H K Snow	31	200	5 00

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

THOS. J. OWENS, Secretary.

Office, No. 10 Stevenson Building, San Francisco, Cal. jy11

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 419 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Friday, the seventeenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

OEO. H. RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. au14

Mining Notices--Continued.

Daniel Webster Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. jy3

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Friday, the twenty-seventh day of August, 1869, and the sale thereof until Thursday, the sixteenth day of September, 1869. By order of the Board of Trustees.

jy31 O. D. SQUIRE, Secretary.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of August, 1869, an assessment of fifty (50c) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventh day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-third day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. au7

Cordillera Gold and Silver Mining Company,— Morelos District, Chihuahua, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of July, 1869, an assessment of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 321 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the ninth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY R. REED, Secretary.

Office, 321 Washington street, San Francisco. jy21

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five (5c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No 502 Montgomery street, Room No. 3, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869 shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the fifteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DUPRAT, Secretary.

Office, No. 502 Montgomery street, Room No 3, San Francisco, Cal. jy27

Hornet Silver Mining Company.—Location of Works: White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of July, 1869, an assessment of ten (10c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth (8th) day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the thirtieth (30th) day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. S. MARTIN, Secretary.

Office, No. 11 Hayward's Building, 419 California street, San Francisco. jy31

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of August, 1869, an assessment of two dollars and fifty cents ($2.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-fifth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary.

Office, 220 Clay street, San Francisco, Cal. au7

Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty first day of July, 1869, an assessment of two dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the thirtieth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-fifth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

THOS. J. OWENS, Secretary.

Office, Room 37 New Merchants' Exchange, California street, San Francisco. jy24

Marlborough Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DUPRAT, Secretary.

Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy24

Office Senator Silver Mining Company.—Location of Mine: Storey County, State of Nevada.

NOTICE.—The Annual Meeting of the stockholders of the Senator Silver Mining Company will be held on WEDNESDAY, the twenty-fifth day of August, 1869, at one o'clock P. M., at the office of the Company, No. 408 California street, for the purpose of electing a Board of Trustees to serve for the ensuing year, and for the transaction of such other business as may properly come before the meeting.

T. B. WINGARD, Secretary.

San Francisco, August 6th, 1869. au7

Silver Sprout Mining Company.—Location of Works and Mines: Kearsarge District, Inyo county, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 408 California street.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. jy31

Yosemite Mining Company, Humboldt County, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the second (2d) day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W N Wade	148	315	$157 50

And in accordance with law, and an order of the Board of Trustees, made on the second (2d) day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. S. L. Jones & Co., auctioneers, 207 and 209 California street, on Tuesday, the twenty fourth day of August, 1869, at the hour of 1½ o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. H. CROWE, Secretary *pro tem.*

Office, No. 220 Clay street, San Francisco. au6

BY MAIL.—The *Mining and Scientific Press* will be sent by mail to any part of the civilized world. In case of removal subscribers have only to inform us of the post office address of the old and new location, and the paper will be sent accordingly

Something to Happen in 1870.

"On September 1, 1859, shortly before noon, two astronomers—Messrs. Hodgson and Carrington—one at Oxford, the other in London, were at the same instant scrutinizing a large group of sun spots. On a sudden two intensely bright patches of light appeared in front of the cluster. Within five minutes the spots travelled over a space of nearly 34,000 miles. Now, at the Kew Observatory there are self-registering magnetic instruments which indicate changes of terrestrial magnetism. At one time the line traced by the pointer will be marked by scarcely perceptible undulations, indicating the almost quiescent state of the great terrestrial magnet. At another, well-marked waves along the line exhibit the pulsations of the magnetic system, influenced in a manner as yet unintelligible to the physicist. And there is a third form of disturbance, the sharp, sudden jerks of the pointer, exhibiting the occurrence of those mysterious phenomena termed "magnetic storms." When the records of the Kew Observatory came to be looked over, it was found that at the very instant in which the brilliant spots of light had appeared to Messrs. Hodgson and Carrington, the self-registering instruments had been subjected to the third form of disturbance.—a magnetic storm began, in fact, as the light broke out on the sun's surface. But this was not the only evidence of the sympatby with which the earth responded to the solar action. It was subsequently found that soon after the spots of light bad appeared, the whole frame of the earth had thrilled under a mysterious magnetic influence. At the West Indies, in South America, in Australia, wherever magnetic observations are systematically made, the observers had the same story to tell. In the telegraph stations at Washington and Philadelphia, the signal-men received strong electric shocks. In Norway, telegrapbic machinery was set on fire. The pen of Bain's telegraph was followed by a flame. And wherever telegraph wires were in action, well marked indications of disturbance presented themselves. Hours passed before the earth resumed its ordinary state. During the night, magnificent auroras spread their waving streamers over the sky, both in the northern and the southern hemisphere. As the disturbed needle vibrated, the colored streamers waved responsive, and it was only when the magnetic storm was subsiding that the auroral lights faded."

The Loudon *Spectator*, from an article in which the above was clipped, proceeds to indulge in the following speculations: "Now, it is evident that the phenomena show the most intimate relation between the peculiar disturbances in the sun and the magnetic currents of our own earth. Directly one of these changes take place upwards of ninety millions of miles away, the electric condition of our planet is changed in some mysterious way, of which our instruments, and even the condition of our sky, bear record. Moreover, these changes in the condition of the sun take place at intervals of about 11 years. If so, perhaps the magnetic excitement of 1859 will recur, and it may be in much greater force next year—in 1870. And if it does, how are we to say what may or may not recur with it? It is quite possible that those periods of speculative financial excitement—which are also said to follow a periodic law of something like the same period—may be more or less dependent on the magnetic condition of our planet; that so mean a phenomenon as speculative frenzy on the various stock exchanges of Europe may be more or less connected with these wonderful discharges of voltaic batteries in the sun, Is it quite impossible that the electric political condition of Europe in 1848—and again, at an interval of eleven years, in the year of Italian revival and revolution, 1859—may not recur after one more period of eleven years, in 1870, in consequence of the returning epoch of magnetic excitement in the sun?"

GEO. E. ROGERS,
(Successor to G. W. Bell.)
ASSAYER,
512 California st., San Francisco.
J. A. MARS, Assayer.
Ores carefully Assayed. Gold and Silver Ores worked.
23v18-qr10pnr

CALIFORNIA
BUSINESS UNIVERSITY
204 Montgomery Street.
Full particulars regarding our Practical Course of Studie may be had by calling at the University, or by addressing
17v17-qy12p E. P. HEALD, San Francisco.

Machinists and Foundries.

PALMER, KNOX & CO.,
Golden State Iron Works,
Nos. 19, 21, 23 and 25 First Street,
SAN FRANCISCO.
MANUFACTURE ALL KINDS OF
MACHINERY,
STEAM ENGINES AND QUARTZ MILLS
NUNBAR'S IMPROVED
Self-Adjusting Piston Packing,
Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.
WHEELER & RANDALL'S
NEW GRINDER AND AMALGAMATOR
HEPBURN & PETERSON'S
AMALGAMATOR AND SEPARATOR,
Knox's Amalgamators,
WITH PALMER'S PATENT STEAM CHEST,
superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.
Genuine White Iron Stamp Shoes and Dies
Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.
Pacific Iron Works.
First and Fremont Streets,
SAN FRANCISCO.
Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.
Among other things, we manufacture the following:
STEAM ENGINES,
Horizontal and Vertical, for either Stationary or Marine use.
BOILERS—High and Low Pressure,
Pump, Pipe and Sheet Iron Work of every kind.
Quartz Mill Work,
including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.
Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hausbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.
Castings of every description, Iron and Brass.
We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.
Orders promptly attended to. Prices as low as possible for first-class work, and we intend to do no other.
GODDARD & CO.
San Francisco, May 1, 1863. 18v16tf

CALIFORNIA BRASS FOUNDRY.
No. 125 First street, opposite Minna,
SAN FRANCISCO.
ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.
☞ PRICES MODERATE. ☜
J. P. GALLAGHER. J. H. WEED V. KINGWELL.
9v13-1y

FOUNDRY FACINGS.
BENJAMIN ELLIOT,
No. 483 Brannan street.....San Francisco,
Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.
10v18qr

JAMES MACKEN,
COPPERSMITH,
226 Fremont st., bet. Howard & Folsom.
All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.
Repairing promptly and neatly attended to.
13v11

THOMPSON BROTHERS,
EUREKA FOUNDRY,
129 and 131 Beale street, between Mission and Howard, San Francisco.
LIGHT AND HEAVY CASTINGS,
of every description, manufactured 24v16qr

CITY IRON WORKS COMPANY.
CLERC & CO.,
IRON FOUNDERS,
Steam Engine Builders, and Makers of all kinds of Machinery,
6v16qr No. 28 Fremont street, San Francisco.

McAFEE, SPIERS & CO.,
BOILER MAKERS
AND GENERAL MACHINISTS,
Howard st, between Fremont and Beale, San Francisco.
Flue or Tubular Boilers, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.
Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, height of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.
Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.
To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.
Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care
To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

HUGH H. LAMONT. WM. CALDWELL.
Cyclops Engine and Machine Works,
Construct and Repair every description of
Stationary and Marine Engines, Mill and Mining Machinery.
Special attention given to Repairing Machinery.
ap17-3m 113 Beale street, near Mission, S. F.

UNION IRON WORKS,
Sacramento.
WILLIAMS, ROOT & NEILSON,
MANUFACTURERS OF
STEAM ENGINES, BOILERS,
CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,
And all kinds of Mining Machinery.
Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.
Dunbar's Patent Self-Adjusting Steam Piston PACKING, for new and old Cylinders, manufactured to order.
Front Street, between N and O streets,
14v11 SACRAMENTO CITY

FULTON
Foundry and Iron Works.
HINCKLEY & CO.,
MANUFACTURERS OF
STEAM ENGINES,
Quartz, Flour and Saw Mills,
Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.
N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

THE RISDON
Iron and Locomotive Works.
Incorporated, April 30, 1868. Capital, $1,000,000.
Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.
Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Revoe, Binsmore & Co., San Francisco.
Steam Engine Builders, Boiler Makers,
MACHINISTS AND FOUNDRYMEN.
All work in their line attended to with promptness and dispatch.
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Lloyd Tevis, John N. Risdon,
Jas. Pollock, Joseph Moore.
Gen. Holladay,
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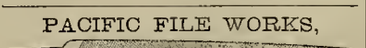
Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

CALIFORNIA TOOL WORKS,
Blacksmith and Machine Shop,
143 Beale St., bet. Mission and Howard,
SAN FRANCISCO.
All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to ☞ All work warranted.
21v17-qy J. WEICHHART, Proprietor.

GLASGOW
Iron and Metal Importing Company
Nos. 25 and 27 Fremont street,
SAN FRANCISCO,
Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings which they offer to the trade on liberal terms.
21v16-3m W. McCRINDLE, Manag.

PACIFIC FILE WORKS,

No. 53 Beale Street, bet. Market and Mission,
SAN FRANCISCO.
Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.
2v17-3m T. G. DURNING & CO

G. T. PRACY.
MACHINE WORKS,
NOS. 109 and 111 MISSION STREET,
Between Main and Spear.

New and second-hand
Engines and Boilers,
FOR SALE.
Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.
MANUFACTURER OF
Lathes, Drills,
And MILL MACHINERY of every description.
PRACY'S
New and Improved
STEAM ENGINE
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The best and cheapest yet Invented—manufactured and for sale. Parties are invited to examine it in practical operation.
F. A. HUNTINGTON'S
Shingle Machines
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Particular attention paid to Repairing.
☞ All work guaranteed to be done in a first-class manner, and at the lowest rates. 12v17tf

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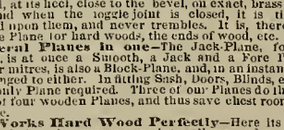
Nos. 18 and 20 Fremont street, near Market, San Francisco.
MANUFACTURER OF
Fire-Proof Doors and Shutters,
Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison
FORGING AND MACHINE WORK,
IMPROVED FIRE-PROOF SAFES,
FIRE AND BURGLAR-PROOF SAFES
Of a superior make. Sole manufacturer of the celebrated
MONITOR SAFE.
BANK VAULTS AND SAFES,
Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.
Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the
1v17tf United States

HIBBERD, SANBORN & CO.,
STAIR BUILDERS.

South Point Mills, Berry Street,
Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.
6v19-3m

To all who use Planes.
The superiority of Iron Planes over those made of wood, for durability and accuracy, is no longer a question and the objections of high price, extra weight, and "sticking" to the wood, of those formerly introduced, are now overcome by the PALMER'S PATENT.

Some of its Peculiarities—The Throat is adjustable, and can, in an instant, be made very fine, or very coarse. The Bit is set for the work to be done, by simply moving a lever. The Bit is squared with the face of the plane, by another lever. Both of these movements are instantly and easily made by the fingers, without loosening the bit. The Bit is fastened by a toggle joint, and can be put in and taken out "as quick as wink." The Bit is firmly bedded, at its heel, close to the bevel, on exact, brass bearing, and when the toggle joint is closed, it is tightly pressed upon them, and never trembles. It is, therefore, just the Plane for hard woods, the ends of wood, etc.
Several Planes in one—The Jack-Plane, for instance, is at once a Smooth, a Jack and a Fore Plane, and for mitres, is also a Block-Plane, and, in an instant, can be changed to either. In fitting Sash, Doors, Blinds, etc., it is the only Plane required. Three of our Planes do the full work of four wooden Planes, and thus save chest room and luggage.
It Works Hard Wood Perfectly—Here its accuracy and nice adjustments come into full use, and no other Plane can compare with it.
Agents Wanted to take orders for these Planes. Call and examine them and learn full particulars, at the CALIFORNIA WIRE WORKS of
6v19tf H. T. GRAVES, No. 412 Clay street.

By Mail.—The *Mining and Scientific Press* will be sent by mail to any part of the civilized world. In case of removal subscribers have only to inform us of the post office address of the old and new location, and the paper will be sent accordingly

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has everrequired repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

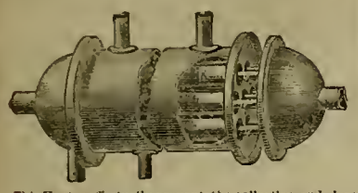
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, **220** Fremont street,

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

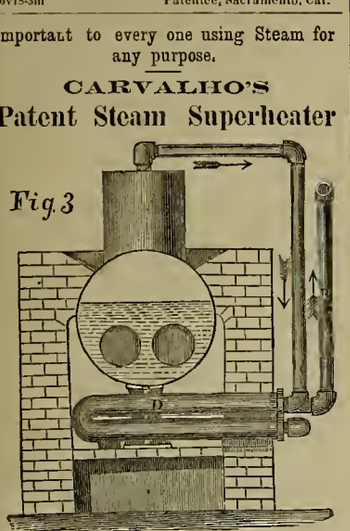
WM. B. CROSS,

16v18-3m Patentee, Sacramento, Cal.

Important to every one using Steam for any purpose.

CARVALHO'S
Patent Steam Superheater

Fig. 3



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1869.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CROCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 55° deg—an increase of 20° deg."

CAREW MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

"Superheater saves at least 25 per cent in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming."

CONTRA COSTA LAUNDRY, Oakland, July, 1868

"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. CO., Cal., August, 1868

"Superheater causes a use of 40 lbs. steam instead of 60 lbs.; use much less water, and there is a saving of fuel." (2 sets.)

SIXTH MECHANICS' INST FAIR, S. F. Sept. 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works better."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.

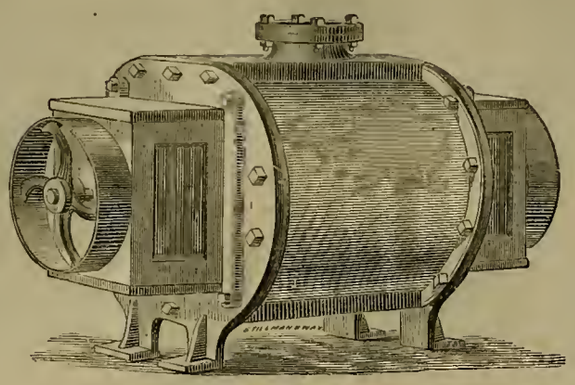
JOHN L. CONSTABLE, Engineer. 25v18tf

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

MANUFACTURED BY KEEP & BARGION,

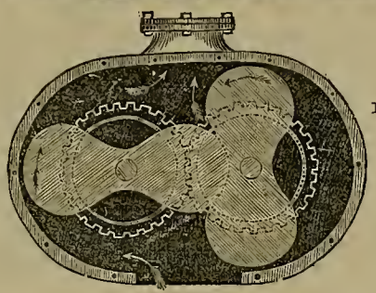
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 31, 1866; and Oct. 9, 1866.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



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—DEALERS IN—

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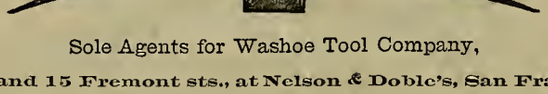

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"	10	" "	5	"	18	"	26	"	6½ " 24
"	11	" "	5½	"	18	"	27	"	7 " 30
"	12	" "	6	"	20	"	28	Coal	2 " 15
"	13	" "	6½	"	22	"	29	"	2½ " 15
"	14	" "	7	"	24	"	30	"	3 " 16
"	15	Drifting	3½	"	18	"	31	"	3½ " 16
"	16	"	4	"	18				

Also PICK EYES ready for the steel, for the Blacksmiths, which will be sold cheap.

I wish to call special attention to my

NEW ADZE EYE PICK,

Which was made under my own supervision while in New York. For BEAUTY, STRENGTH and DURABILITY, they are unequaled.

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Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

It has never been claimed for it that it will extract gold from ores which do not contain any of that metal.

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GUARANTEED RESULTS.

With responsible security. For an interview, and all desired particulars, address

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June 25 1869. 29v18-3m

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TWICE AS STRONG AND WILL CUT AT LEAST TEN TIMES AS FAST AS THE BEST NATURAL STONES.

We manufacture the following qualities, viz:

"Hard," for Machinists, etc.

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Diameters, **4** to **70** inches; thickness, ¼ inch to 12 inches; and any fineness required.

Solid Emery Wheels and Sharpening Stones,

Of all forms and materials.

These Stones are fast superseding the natural ones in England, the tests made there showing them to cut about fifty (50) times as fast as the Newcastle, and entirely free flaws, and hard and soft spots.

☞Grindstones, with Frames, Iron Troughs, Shafts and Treadles, ready to set up in working order, for sale a wholesale or retail.

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M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,

8v13-1y Stove Store, No. 1 Clay street, below Davis.

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Illuminating, Lubricating,

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PAINT OILS,

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KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

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THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

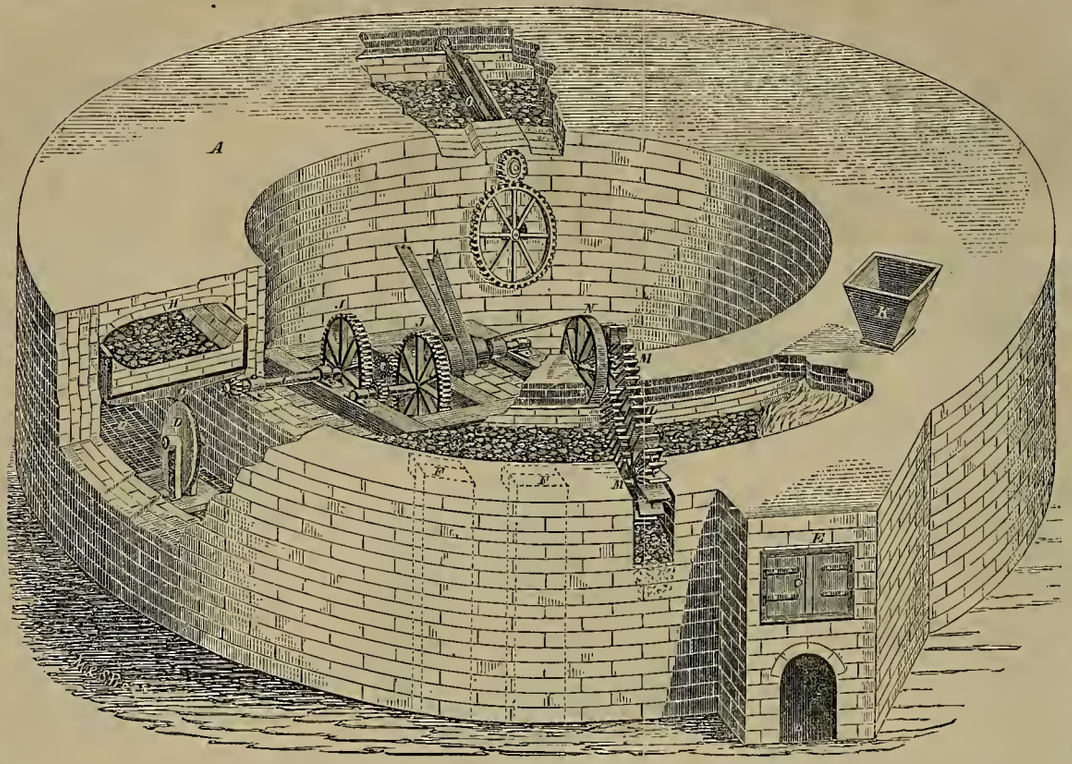
Prices varying from $1 50 to $2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for **50** cents

21v12 F. E. WEYGANT, Proprietor.

Fred. Ernst's Patent Rotary Roasting Furnace.



This is a mechanical furnace, which does away entirely with manual labor, excepting a fireman. It charges, roasts, stirs, and discharges the ore by a very simple mechanical contrivance,—in fact performs all the operation required in the oxidation or chlorination process of roasting gold or silver ores.

The ore is taken by means of an elevator from the battery, and is discharged constantly and regularly into the hopper, *K*, from whence it reaches the rotating hearth, *G*. This hearth consists of a cast iron orbicular ring paved or lined with bricks, and revolves on a series of iron rollers, *D*, and is kept continually in motion by means of the gearing, *J*. This gearing has two gear wheels, three feet in diameter, and pinions to regulate the speed from the cone pulley, increasing or diminishing it to conform to the required slow motion of the hearth, *G*. The hearth so charged and running constantly carries the ore into the first heat, which is next to the flues, and so passes all the different temperatures of the furnace, thus effecting a very uniform heating and chemical action on the ore; at the same time it has also to pass the stirrers, of which there are different kinds,—stationary and movable ones,—the number and speed of the latter varying according as the ore contains more or less sulphur. The movable paddle stirrers are shown at *O*. These movable stirrers are connected with the gearing under the iron bed of the hearth, *G*, as shown at different points, until it passes the fire-bridge, where it receives its ultimate and highest heat, and is then discharged by the discharging apparatus. This discharging apparatus consists of two chain or rag wheels, *M, M*. These two chain-wheels drive a double endless chain with inserted plates of iron (scrapers). The chain hanging loose underneath between the wheels draws these iron plates through the cavity of the hearth, and so discharges constantly the roasted ore. The construction of this furnace is of the simplest kind, and all the necessary castings can be easily transported even on mule-back. The loss of the silver by sublimation in present furnaces, it is claimed, is avoided in this, as the silver condenses before reaching the flues; the distance being great, and the heat diminishing gradually until the gases reach the point of final exit. Liberal terms are offered to parties who desire to use this furnace. Further information can be had by addressing the Inventor and Patentee,

To keep the current of air constant throughout the whole length of the furnace, the arch over the hearth decreases slightly from the fire-bridge toward the flues. For concentrated sulphurets it may be advantageous to increase the circumference of the hearth. The advantages claimed as attainable from the use of this machine are—the doing away with a large portion of the costly hand labor ordinarily required, and the better and more thorough accomplishment of the same by machinery. A great saving of fuel, not only through the length of the hearth, but also for the reason that all the gases which are lost by other furnaces are economically employed in this as a substitute for other fuel.

The furnace is so constructed that the large access of air required for the oxidation of the ore, in addition to that demanded for the consumption of these gases, does not operate to materially lower the temperature in the furnace. When the ore in this furnace is once desulphurized, the gases cannot form any new combination with the ores or metals therein, for the reason that while the currents of air and gases are moving to the rear, the furnace hearth is constantly advancing in an opposite direction.

F. ERNST, San Antonio, Lower California, Mexico,

Or by calling upon H. W. SCHMIDT, Druggist, Kearny street, corner of Sacramento, or at this office.

Sheffield Scientific School

Of Yale College, New Haven, Conn.

This department of Yale College, instituted in 1840, and endowed with the National Land Grant in 1866, furnishes advanced instruction in the various branches of Mathematical, Physical, and Natural Science.

The School is under the direction of the President of the College, a Board of thirteen Professors in different specialties, and six assistant instructors.

Regular courses of study, leading to the degree of Bachelor of Philosophy, conferred by Yale College, are arranged as follows: 1—Chemistry and Mineralogy. 2—Civil Engineering. 3—Mechanical Engineering. 4—Mining Engineering and Metallurgy. 5—Agriculture. 6—Natural History and Geology, and 7—Select Course.

Advanced students are also admitted to optional courses, and if already College graduates, are received as candidates for the degree of Doctor of Philosophy.

Tuition, $125 per year of forty weeks.

The Libraries, Museums, Laboratories and Apparatus, accessible to students, are varied and extensive.

For copies of the Annual Circular and Report, letters may be addressed to the "Secretary of the Sheffield Scientific School," New Haven, Conn. 13v6-ly 16p

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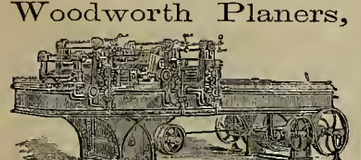

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With patent expansion feed gears, and other improvements, made at Worcester, Mass., in the most finished and substantial manner; also every description of Smith's and Woods', and

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Wood Working Machinery.

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☞ Agents for Blake's Patent Steam Pump, (warranted the best in the market); Davis & Furber's wood en Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustrated Catalogues sent free. Address W. O. M. BERRY & CO., 114 California street, San Francisco. [3v19tf

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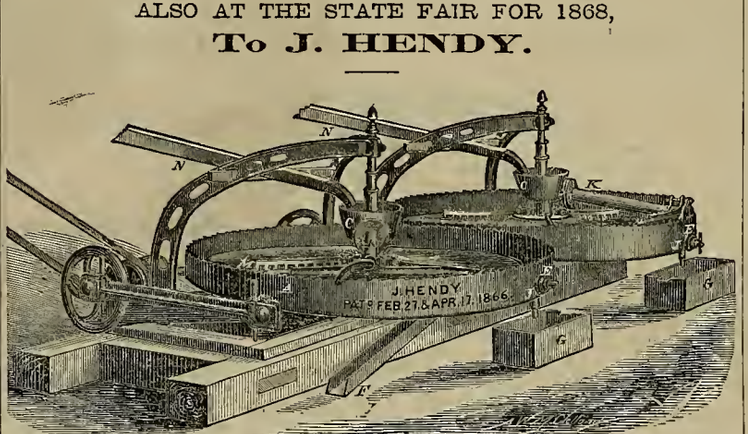
PREMIUM FOR BEST CONCENTRATOR
AWARDED BY THE
MECHANICS' INSTITUTE, 1868,
ALSO AT THE STATE FAIR FOR 1868,
To J. HENDY.



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IMPROVED CONCENTRATORS

ARE IN PRACTICAL USE ON THE PACIFIC COAST.

Mr. Hendy, by diligent and practical application, has improved his Concentrators until they now stand unrivalled, far in advance of any yet brought to public notice.

By recent alterations in the patterns for these machines, they are now made

Stronger and more Durable than Ever.

Office of North Star Mine, Grass Valley, Nov. 12, 1868.

Joshua Hendy, Esq.—Dear Sir:—I take pleasure in certifying to the efficiency of the two last Concentrators ordered from you. We have run them steadily since July last, with but a very trifling expense for repairs. The additional length of step is a decided improvement. The first six sent to us have run steadily for nearly nine months, and are still doing good work. * * * The concentrations from the eight pans alone much more than pay our entire surface expenses. Without them we should lose a large proportion by any system of concentration now in use. The eight Concentrators receive the pulp from our 24 stamps, which are crushing 1,040 tons per month. Our sales of Sulphurets last month amounted to 70 tons, or nearly 7 per cent. of the mass crushed. The sulphurets from the reconcentration, contained about 10 per cent. sand. In addition to their properties as concentrators, they have done us good service as amalgamators, they having saved us the past month 50 ounces of hard amalgam, worth $350, which otherwise would have been lost.

Respectfully yours, J. H. CROSSMAN, Supt. N. S. Mine.

J. HENDY, Patentee.
Office at Union Iron Works.

13v17tf

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City
BRASS AND BELL FOUNDER

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CHURCH AND STEAMBOAT

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TAVERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS

Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder cocks, Oil Globes, Steam Whistles,

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For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

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Saw Smithing and Repairing
ESTABLISHMENT.

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EACH SAW IS WARRANTED IN EVERY RESPECT

Particular attention paid to construction of

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At the lowest Market Prices.

B. P. Spectacles.—The genuine Brazilian Pebble, so cool to the eye, can be had at Muller's, 205 Montgomery street, Russ House Block. ⁂

MINING AND SCIENTIFIC PRESS.

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, AUGUST 21, 1869. VOLUME XIX. Number 8.

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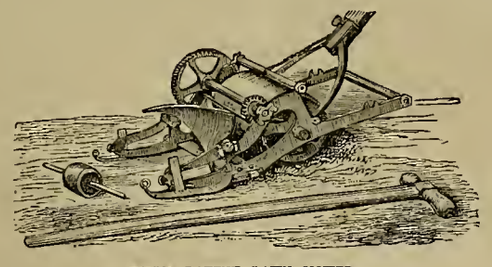
Hill's Patent Lawn Mower.

Close-shaven lawns add greatly to the beauty of grounds about a residence; while a rugged, rough mown or uneven growth of years is an eye-sore to good taste anywhere. The English have set the world a most excellent example of this mode of ornamentation; but the cost of keeping such grounds in order has ever been a great drawback to their general introduction and maintenance in America. To make a fine velvety lawn, the grass should be cut once, certainly, better, twice a week. Ordinary scythes make the work too rough; while shears, as ordinarily employed, are quite too slow. Yankee ingenuity, however, has recently met the want, and given us a light and most excellent machine for doing this work well and quickly.



HILL'S PATENT LAWN MOWER.

We give herewith an illustration of one of these devices, the operation of which will be readily seen by any one accustomed to the use of such instruments. It is so small and light that it is easily pushed forward by a handle, with a cross-head. The forward motion communicates a rapid revolution to spiral cutters, which cut the grass very evenly, and leaves it smooth and close shorn. The caster-roller is to be used when mowing borders, and when not in use it can be carried on the rear end of the machine. The height of cut is regulated by adjusting the shoes, and the handle is adjustable to different heights by the chain hook. All the parts of the machine are made to interchange, so that in case of breakage any single part can be supplied. The machine cuts fourteen inches wide, and weighs seventy-five pounds.

This machine has been very extensively introduced in the Eastern States, where it is considered a great acquisition to every well regulated homestead. Quite a number of the machines have been sold on this coast. Among those who are using, and who highly recommend it, we may mention Messrs. Stanyan, Benchley, J. A. Donahoe, Sather, Baker, Horgan, Supt. of City Parks, and many others of this city, as well as quite a number of residents across the Bay in Oakland, at Alameda, etc. Dr. Barlow J. Smith, at 637 California street, is sole agent for the sale of this machine on the Pacific coast, from whom any farther particulars may be learned.

RETURN OF ROSS BROWNE.—Our Minister to China, J. Ross Browne, returned in the steamer which arrived on Wednesday. When Mr. Browne left Pekin, he expected to meet his successor at Shanghai. On learning there the actual state of affairs, he has no doubt done wisely in returning to this city, leaving his legation in proper hands, to learn what may be the intent and wishes of the government. Mr. Browne is not a man to occupy a post where he thinks he is not wanted. In whatever regard government may hold his services, we think there is but one opinion on the Pacific Coast,—the portion of the Union most interested,—as to the manner in which he has discharged the responsible mission which has been intrusted to his hands. There is no question, we think, but that the interest of the public would be served, by his immediate return, with the fullest expression of confidence in his acts, on the part of the government. What plans the politicians may have in view, we know not; we only hope they may be induced to listen to the voice of the people most interested in this important mission.

THE completion of the Pacific Railroad has advanced California and her sister States on the Pacific slope, from the condition of distant and dependent provinces, to a full standing in the Union, with all the privileges and benefits resulting therefrom.

THE POLYTECHNIC ASSOCIATION. —The next lecture before the Polytechnic Association of the Mechanics' Institute, will be given by Prof. LeConte, of the University of California, on Thursday evening, September 2d.

The Late Eclipse of the Sun.

We have elsewhere given, in the present number, a brief description of the late eclipse of the sun as it appeared to the observers stationed at Des Moines. We give herewith a diagram, as it always appears, (of course, with varying lines of light) of the corona at the moment of total obscuration, the small protuberances issuing from the right side of the moon's disk, are intended to represent the "points of rose-colored light" or "tongues of flame," which present such a remarkable appearance at the instant of totality, and which also appear with varying forms. These colored flames have already led to most important results in the determination of the physical constitution of the sun; and their study will still farther employ a large share of attention in the investigations to be undertaken from the phenomena of the late eclipse.

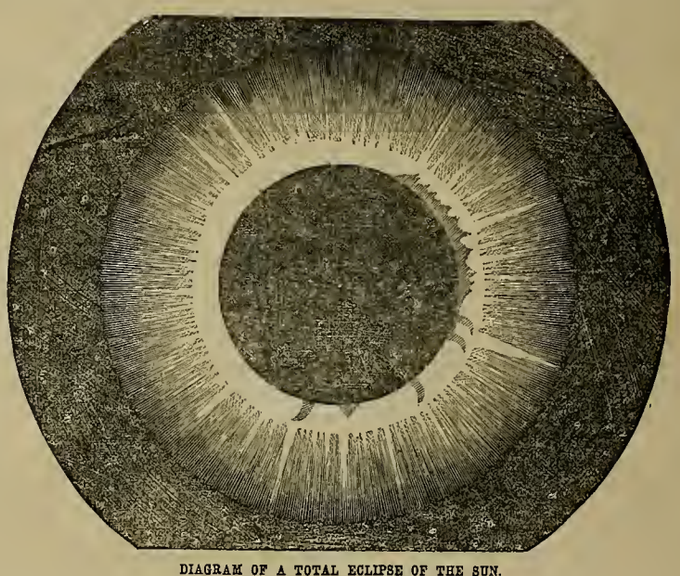


DIAGRAM OF A TOTAL ECLIPSE OF THE SUN.

They make their appearance, as already observed, as soon as the disk of the sun has been completely covered, and as the moon's disk moves forward they gradually disappear from the side where first seen, and others appear upon the opposite side, and continue to increase in size and height until their base is seen to rest upon the appearing disk of the sun, when they are immediately lost in the intensity of the light of that luminary.

Their successive appearance and disappearance in the manner described proves their immediate connection with the sun; while the observations made upon them by the spectroscope, the instrument described in another column, shows that they are really what they appear to be—great tongues or mountains of flame, rising to immense heights from the sun's surface—some of them reaching an elevation of not less than 70,000 miles, or one-twelfth of the sun's diameter. This and other revelations of science settles beyond a doubt the fact that the sun is an incandescent mass of material, similar to those which constitute the earth, and that it is surrounded by an atmosphere, in which active combustion is constantly going on.

Such of our readers as are familiar with the observations of the eclipse of 1868, will appreciate the interest which is felt among scientists, to add, from the late opportunity, important discoveries to those which have already been made. Whatever valuable results may be arrived at, from time to time, as the late observations may be worked out, we shall place before our readers as fast as they come to hand.

NOT COMING.—We regret to state that the sudden death of an only brother, will prevent Prof. Brush, of the Sheffield Scientific School, from making his contemplated visit to the Pacific, as we announced, two weeks ago, he would do, this fall. Filial duties of an only remaining child of an aged father will not admit of so protracted an absence as was contemplated under other circumstances. Perhaps some other representative of that inststitution, which has so many friends on this side of the continent, may be able to pay us a visit during the coming autumn.

TILTON' JOURNAL OF HORTICULTURE.—The publishers of this journal, the finest and most elaborately illustrated magazine of the kind in the United States, advertise that in order to extend their circulation in California, they will send a specimen number free to any address. It is devoted to Fruit, Flowers and Vegetables. Those who desire to subscribe after seeing the specimen will address *Tilton's Journal of Horticulture*, Boston, Mass." No Californian, who owns an acre of land, will resist the temptation to subscribe, if he once sees this journal.

Communications.

Letter from White Pine.

[Written for the Mining and Scientific Press.]

Eds. Press :—The great "strike," which with many has been used to "bear" White Pine stocks in the San Francisco Boards, has passed, and is heard of no more here. The members of the Miners' Union declare that, as a body, they were opposed to violence, and those who at the last demonstration drove the men out of the mines, at night, now lie in the county jail. There are quite a number of miuers using the strike as an excuse at a distance; but miners are plenty here at four dollars per day.

The California Co. make the completion of their "Fine Building" an excuse for not developing their mines; the few buckets of water which they have secured, by eiuking, has been puffed to thousands of gallous, and has stopped the artesian horing. They now advertise for parties to sink a shaft for water, and when the house is done, will no douht wait for the completion of the White Pine Water Works, and then for springs. All such companies are a detriment to a mining district. The Water Co. have their water now at the summit of Fossil Hill, or the main ridge, and will have it running in Hamiltou next week, and most likely to Treasure City by the first of October.

Important Mining Decision.

The District Court is having a great deal of hueiness this fall. The principal cases, and those which will bring out the poiuts to decide many others, are the Aurora Consolidated against the Earl; Pogonip and Othelo *vs.* West Point, and Original Hidden Treasure *vs.* Rathhurn. Judge Beatty has already made oue rule that is causing a great deal of feeling; and well it may, for it jeopardizes the title to nearly every property in the district. He rules that a location consists of but two hundred feet, and that *two days labor must be performed for each location, and the same be recorded, to hold the mine one year.* There are over 1000 mines recorded here, and of these a majority have performed but two days' work to hold the whole, and have recorded but the two days' work. The Judge will not admit that the custom, as shown hy this fact, or that only some ten or twelve parties recorded more than two days' work, amounts to anything. When it was proposed to produce the men who made the law, he simply remarked that if they made laws which they did not understand, they must ahide the cousequences. By far a large majority of the mines incorporated in San Francisco are more liable to relocation, and in case of dispute the original locators would lose their property, on that point alone, if the other party had performed the two days' work for each two hundred feet.

Mining Operations.

The Aurora Consolidated have purchased the Colfax mine, since my last, for $12,-000, and will no douht now win their case. Hidden Treasure is very doubtful and complicated. J. W. Bailey, agent of the Treasure Hill M. & M. Co., left for the East last Monday. He has secured the best property on the Hill. E. B. Blaisdell now has charge of their mine and mill. The mill has been changed to wet crushing, and Mr. Porkins, the company's amalgamator, informs me that he crushes about forty tons of ore per day. The company's mine furnishes sufficient ore to supply the mill, besides piling up constantly for winter. They now have upward of one thousand tons out, and are extracting about three hundred tons daily. I see that one of the mines deeded to them still has a value in the Stock Board. I refer to the Industry. The Mammoth have struck some very rich ore this week, and are finding it in quantity; they have some eight tons on the dump. It very much resembles the pure chloride found in the Emersley, but carries more horn silver. I understand that a new superintendeut has heeu appointed for the mine, but he has not yet made his appearance. A rich deposit is also reported in the Bulwark miue, of the John Dare Co. The Silver Vault Tunnel have fouud some ore, but uothing of importance; they expect daily to tap something rich. The Eberhardt have a few men at work taking out ore and, by the first, will resume straight work. Mr. Bicknell, who has had charge of the mine, left today for the East, and Mr. Stedman, a thorough, practical miner, takes his place. The Mazeppa (uot the incorporated one—for few here know anything about that) are doing but little. They no doubt desire to sell, hut give out that they will work the mine next month. The mills are well supplied with ore.

September will show the strength of White Piue. Two of the smelting furnaces, at Swansea, are now experimenting on ores from the Base Range, and each claims to be successful. J. M. Dawley left yesterday with four men to start up the mill at Paranaghat. They will run the mill and mines with Chinese labor. D. S. Ogden is also about to start up the Morey Mines at Belmont. Col. Buel is on the way out from Europe, to turn over the El Dorado Sonth, and other miues belonging to himself, with the mill, to a London company. Our shipments this month will not exceed $300,000.

G. B. E.

Treasure City, Aug. 13th, 1869.

The Explorer's, Miner's, Miller's, and Smelter's Friend.

Written for the Mining and Scientific Press.

Editors Press :—The above is the name given to a machine that has been devised for the honelit of the mining puhlic generally, but which is more especially valuahle for the prospectors of this great and virgin mining country. Beyond the regions that have been, and are now being explored, the primitive Rocky Mountains arise, uplifting their east and west declivities of secondary strata, loomiug in the distance to entice forward the more adventurous, where, if the historical analogy of the mining world should he their guide, two larger, more interesting or legitimate fields for their labors cannot remain unexplored, anywhere.

It has been correctly observed by some of the hest and most practical authors on mineralogy, that however exporienced a miner may be in the visual discrimination of gold and silver ores, he is often deceived in his judgment of the value of rock; and this applies to ores of much greater value than such as will pay for mining and reduction, as the mixed ores of volcanic regions, and the antimonial, copper, lead and iron ores, where the precious metals are completely concealed. These authors also commend the common mouth blow-pipe, as an inseparable companion of those requiring greater certainty in mining operations, as well for quantitative as for qualitative assaying of most minerals, hut more particularly for silver, which it performs with surprising accuracy. Its powers are truly wonderful, but proper instruction, great practice, and expensive tools are imperatively necessary, as well as the peculiar qualifications for handling, manipulating, smelting and cupeling an assay of hut one grain, and where the resulting button is eo small that the one-thousandth of a grain would be but $37.70, and the one-ten-thousandth $3.77, per ton of 2,000 pounds. I know of no other single chemical operation that requires more knowledge, practice, care and watchfulness, to ohtain exact results. These, with many other difficulties to which there is no "royal road," and the greater need for preparing a correct homogeneous eample, to render the eample of one grain the correct representative quality or ratio for the ton, have and will prevent its general application.

The crucible and scorifier require a large furnace and muffle, with numerous tools, etc. They are slower in action, and consume a large quantity of expensive fuel, which must be prepared, or carried from place to place, as required; so it is far worse than the former, as all are thus prohibited from its use.

The humid or chemical methods demand many costly and fragile tools, with dangerous liquids, an especial education and general knowledge, or they will he mere useless things.

Thus the explorers have been roaming ignorantly, where knowledge is most desirable, and the legion of mining companies have forwarded mills at a cost of from $20,000 to $100,000, to assay au average from their ledges, to prove most disastrously to them that but *one* in fifty are valuable; aud millions of tons have been reduced that would not pay by either milling or smelting, for waut of an easy means to ascertain its value.

In view of the immense demands of this country, and knowing the insufficient methods in use by miners, millers and smelters, *when required for prospecting*, as well as the first and most important difficulties of my students in their manipulations with the common mouth blow-pipe, I have contrived this machine to overcome all the real obstacles appertaining thereto; such as a continuous hlast, preparing and fluxing the assay, shaping its holder and charcoal support, cupels, etc., as well as holding and varying its position during the smelting, cupeling and refining operations; and ascertaining by tahles, which lie under and on either side of the balanced button, as it rests on the beam, the value in dollars per ton, or its 1,000th fine, for silver and gold, and percentage in base metal assays, all being read at sight without calculation. In addition to this I have two diverging metallic straight-edges, laid on a bed, so that the one end may represent $100 and the other $10; the intermediate space being graduated from $10 to $100, and wherever the button *jams*, its value is recorded on the scale. There is also a hole at the end of this plate of euch size that a $40-button may just drop through, when the explorer may proceed in his questings for other ledges, as this is not sufficiently rich to pay for mining and milling of silver ores in the interior.

By these combinations the apparatus has surpassed my expectatious, as to the quantity of ore it will reduce. I have operated successfully on twenty grains, although it is arranged for ten grains to the puhlic, and I claim that with these arrangements and combinatiou of automatic movements and calculator, a man of ordinary skill can make an assay with this apparatus anywhere, even on the ground, sufficiently near for all the practical working purposes of those to whom I have dedicated it, and in less time and at one-tenth of the cost of any other method. So portable is the apparatus that the whole machine, with fluxes, tools and scales, (weighing less than seven pounds) is packed for conveyance within a cubo of 5½ inches. The price of the whole is $100, accompanied by a hook of instructions for assaying gold, silver, copper, and lead. Those buying a machiue in the city of San Francisco, having the further advantage of seeing an assay made with it by its inventor and patentee.

J. S. Phillips, M. E.

San Francisco, Aug. 17th, 1869.

The Mines of Colorado.

We are permitted to copy the following from a private letter dated Empire City, Colorado, August 2d, 1869 : "Denver is situated on tho plains fifteen miles from the foot of the mountains. Empire City is in the mountains 49 miles west of Denver, and about a mile off the Denver and Georgetown road. A daily coach runs from Deuver to Empire; fare ahout ten dollars. Georgetown is seven miles from here, and is claimed to be a rich silver mining camp. Ten miles west of this place is another rich silver mining camp, the ores of which contain less hase metal, but will yield only 60 per cent. by raw amalgamation. The mines here are gold, with but little silver; the veins are large,—from three to twelve feet thick,—and are easily worked. There is one here, the Conqueror, down 225 feet, and so soft that the ore is spaded up. One would think we ought to make money with suoh advantages, and so we can, when we are able to work the ore and get 80 to 90 per cent. of the gold. The ores are pyrites of iron, with some copper; but the copper pyrites are found only in spots. The gold is very fine, and the ore contains a large amount of sulphur and sulphate of copper, with sometimes a little native copper in thin scales or sprigs ou the face of the wall; but not in the vein. This is the kind of ore we have; and it only varies in the amount of sulphur and sulphate of copper. The bullion we get here is .850 to .880 fine—at Central City. At Black Hawk and Nevada it is not so fine. Those places are fifteen miles northeast of this place and forty miles from Denver; they are large mining camps, and have the same kind of ores with some galena, and the miners meet with the same difficulty in extracting the precious metals that is encountered at Denver. Their tailings are worth about twice as much as they get in the stamp mill. Twenty-five miles north of this place there is another very rich mining camp, where they still have the same difficulty. Twelve miles northwest of Central City there is still another of tho same kind; and south of here, twonty to ouo hundred miles, is a vast country of the same kind, only more so. They cannot get as much in the mill as we do; while the ores assay twice as much. They have both gold and silver. Now these ores contain flour gold, iron and copper pyrites, some arsenic and antimony, a large amount of sulphur and some free gold, and what we want is some one who can work these ores up to 80 or 90 per cent."

Selection by the Stock-breeder and by Nature.

The *London Quarterly* has an article on Darwin and his gradually winning doctrine of Natural Selection, from which we qnote the concluding portion: "Man can accumulate variations either in the root, the leaf, the flower, or the fruit of plants, their color, odor, or taste; in the size, swiftness, or scent of dogs; he can alter the bill, the feet, the tail, or the habits of pigeons; can increase the milk of the cow or the fat of the pig; can alter the length of ear in the rahbit and of horns in the hull, or can attend to two or even more of these points at once. In like manner the law of 'survival of tho fittest,' hy simply determining which out of the immense surplus annually born shall be the parents of the next generation, must lead to the modification of every part of an animal's organization that affects its welfare—that is to say, sooner or later of its whole organization. So long as the changes of land and eca of which geology assures us, and their concomitant changes of climate, of soil, and of vegetation, and of tho distribution of animal forms, are going on, each species in turn must be exposed to new conditions and new dangers, must have to live upon new food, or to struggle with new enemies. Those whose organization is sufficiently flexible to furnish in each generation favorable variations, will become adapted to the new conditions, and will appear as the new or representative species of the naturalist; such as could not vary quickly enough would die out, and furnish the extinct species whose remains the palæontologist disentombs.

"Here we have at all events a real and a powerful cause in action, and one which is accurately defined, and has been copiously illustrated by observation and experiment. No occult powere are postulated, hut instead of them demonstrable groups of facts; and Mr. Darwin has developed his theory so fully, and has shown it to he in accordance with such a vast mass and variety of phenomena which on any other hypothesis are unintelligible, that it has commanded very general acceptance, ospecially among goologists with whose genoral doctrine it so well harmonizes."

How to Obtain a Correct Photograph. Whoever has seen or sat for his photograph has of course noticed the look, so unlike a likeness of himself, which he puts on when he faces the daguerreotype apparatus, at the moment the portrait is to he taken. "That's what's the matter" with so many of the sun-pictures which though daguerreotypee are yet no likenesses. It is only at that particular point of time in his life that the sitter ever did look just eo, and, as he never did before, and never will again, should he be surprised to hear his friends say that his photograph does not look like him? To do away with this stereotyped solemnity of sittere to the daguerreotype, we read that an artist of Cleveland, Ohio, has adopted the expedient of a large mirror, mounted on a moveable stand, which is wheeled to the side of a camera, and the sitter is thus enabled to see himself as others see him. The effect is said to be extraordinary on any sitter. The stern scowl is suddenly changed to a pleasant smile, and when that desirable object is attained the impression is suddenly fixed on the plate.—*Ex.*

Starch Luster is a substance used for washing purposes, which, when added to starch, causes the linen to which it is applied to assume not only a high polish but a dazzling whiteness. A portion of the size of an old-fashioned cent, added to half a ponnd of starch, and boiled with it for two or three minutes, will produce the best results. This substance is nothing more than stearine, colored hy a slight additiou of ultramarine blue, the essential ingredient being the stearine; and with or without the coloring matter will be found to add very much to the beauty of linen articles to which it is applied. Stearine is to he had at any good drug store.

Mechanical Progress.

Engine Efficiency Independent of Boiler.

In the ordinary mode of comparing the duty of steam-engines by determining the quantity of coal necessary to develop a given power, the efficiency of the boiler is not distinguished from the efficiency of the engine. Messrs. B. W. Farey and Bryan Donkin, of England, have recently made some interesting experiments with an apparatus designed to measure directly the heat carried away in the condenser. Measuring at the same time the work developed by the engine, by means of indicator diagrams, all the elements are ascertained, necessary for determining the efficiency of the engine independently of the boiler. The quantity of water passing through the condenser is measured by conducting it over a weir or notch. The temperature of the condensing-water on entering the condenser, and that of the mixture of injection-water and condensed steam leaving the condenser, is ascertained by ordinary thermometers; lastly, the work done in the cylinder is ascertained by indicator diagrams. Dividing the horse-power developed in the cylinder, expressed in thermal units, by the quantity of heat imparted to the injection-water in thermal units, the quotient expresses nearly the efficiency of the steam. And since the efficiency of the steam in the same engine does not vary much for moderate variations of power, when the efficiency of the steam has once been ascertained, the measurement of the volume and temperature of the injection-water affords a new means of ascertaining the work done by the engine. Messrs. Farey and Donkin have therefore contrived photographic registering apparatus, by which the volume of flow and temperature of the injection-water are continuously recorded; the data so obtained being used either to determine the efficiency of the steam, or, if the efficiency of the steam is known, to determine approximately the power of the engine.

Boiler Explosions.—The *Artisan* says that there is no doubt that the *leakage* in boilers has saved thousands of lives, by the prevention of explosions. The pressure is thereby prevented from becoming excessive. If a boiler be filled to complete repletion, with all escape for steam closed up, it may be heated to nearly any extent above the boiling point of water without the generation of steam, and without further indication of pressure than what is produced by the expansion of water by heat. If, however, a valve or cock be now suddenly opened, the whole liquid contents of the boiler will be simultaneously and instantaneously transformed into vapor, occupying 1,700 times their original bulk.

There are many reasons for believing that a majority of the disasters which are recorded as having taken place after leaving boat landings, or railroad depots, or soon after starting engines which have been at rest, is attributable to the cause we have just mentioned, and that the simple expedient of *always leaving some issue for the passage of steam while fire is under the boiler and the engine is at rest*, will be sufficient in itself for the prevention of such accidents. Steam is more rapidly "got up" in a boiler with its safety-valve partly open than when it is closed down tight.

Leather for Belts.—J. H. Cooper gives in the *Journal of the Franklin Institute*, the experiences of a practical man upon the matter of the selection of leather for belts:—"The leather should be oak-tanned; and should be made from young hides, not from those of old animals. Suitable leather having been chosen, though it may be ever so good, it may be spoiled in currying; and as this is an important part, it is conducted under my own supervision. I have the *shoulders* cut from the hides, and nothing but FOUR *feet in length of the choice butts*, curried for belting purposes; as the *shoulder, naturally stretching in a different direction* from the butts, causes great annoyance, the belts running crooked.

The putting on of belts should be done by a person acquainted with the use of belting, and too much judgment cannot be exercised in this respect. The butts to be joined together, should be cut perfectly square, in order that one side of the band may not be drawn tighter than the other. For the joining of belts, good lace leather, if properly used, being soft and pliable, will always give better satisfaction than any patent fastening or hooks which have yet been invented."

Delicate Balances.—The New York *Mining Journal* says: A balance which lately came into the possession of Bowdoin College, Maine, is sensitive for one-tenth of a milligramme, with a charge of ten kilogs. in each scale; that is, to the twenty-millionth part of the whole charge. The University of Upsala, in Sweden, has two balances, each carrying one kilo. in each pan, and sensitive for one and a half milligrm. We are, here in New York, far ahead of that. Balances can be bought here which, when charged with one kilo. in each scale, are sensitive for one-tenth of a milligrm. These balances are, therefore, fifteen times more sensitive than the Swedish ones. We have in our own office a balance which, when carrying 100 grammes in each scale, is sensitive to one-tenth of a milligrm., and, of course, much more sensitive when charged with a less weight. In any event they surpass the statements made by our English and French contemporaries. We will only add that the common assay balances now in use in the United States assay office in New York city show a difference in load of less than the one-hundredth part of a milligrm.

The Nichols Steel Patents.—"Five patents,"—says the Canton (Ohio) *Republican*,—"have been granted to Mr. Nichols and the Malleable Iron Co. One is for converting white cast iron into steel. The article is taken right from the foundry floor and packed in annealing pots, and then placed in the ovens precisely after the manner of making malleable iron, differing only in the chemicals used in the pots. We were shown plow points thus made that were heated under our observation, hammered to a fine edge, and thus tempered so hard that after breaking off a point to see the quality of the steel we readily scratched our name upon the window glass. We were also shown many other articles, among them knife-guards used by reaper and mower manufacturers, and by them made of wrought iron at great expense.

By far, however, the most interesting experiment we witnessed was under a patent for refining steel or restoring burnt steel. We saw a piece of steel broken, one-half of which was thrown into the fire and burnt until the particles looked lifeless and granulated easily. This same piece was again heated and plunged into the chemical bath, and in a moment came forth, not only restored to life, but in comparison to the piece held in our hand, much finer, and upon test much superior in strength."

The Centrifugal Extractor.—This machine, which has long been in use for sugar-making and clothes-wringing, has been applied, in France, to the extraction of the juice of grapes and apples for wine and cider-making. It is said to answer the purpose admirably; doing, on a recent occasion, in two hours, the work which, with the wine press, requires seventeen. The juice was moreover all of the same quality; while with the press, it is only the first runnings which will make wine of the best quality, the long contact of the rest with the skins and stalks rendering it fit only for wines of inferior quality. In the case of cider, the use of the machine seems equally advantageous.

Connecting the Ends of Cylindrical Boilers.—The flat ends of cylindrical boilers are sometimes connected with the barrels and flues by means of rings of angle-iron; but such rings are liable to split at the angle; and therefore it is considered preferable to make the connection by bending the edges of the endmost plates of the barrel and flues, or by bending the edge of the flat end. A flat end to a cylindrical shell, or a flat top to a steam-chest, connected by means of an angle-ring alone, without stay-bars or gussets, is dangerous at high pressure, even when of small diameter; as the angle-iron ring, although it may last for a time and be apparently safe, is almost certain to split at the angle in the end.—*Artisan*.

Castings Instead of Electrotypes.—The *Boston Journal of Chemistry* for August 1st, has some illustrations printed from *cast* cuts made by a new process. It remarks upon them as follows: "It will be seen that the cuts are as clear as are afforded by the electrotype process. By this method the most beautiful and perfect castings are rapidly made, and the new art promises to be of the greatest utility. The two principal points of interest in the invention are the use of *fine potters' clay* instead of sand for the mold, and the injection of the molten metal at the *bottom* under *great pressure* by a piston moving in a cylinder."

Scientific Progress.

The Eclipse at Des Moines.

The results of the observations made at this point are reported as highly satisfactory. The weather was perfect, and the sky clear; and the scientific gentlemen who constituted the corps of observers, made the most of their opportunity. Every possible preparation had been previously made. Six large telescopes were mounted at Prof. Harkness' observatory, an equal number at that of Prof. Newcomb, and three at the private observatory of Dr. Peters. The Chicago *Times* gives a description of the day and the doings, from which we copy the following paragraphs: "There was a steady but slow diminution of light down to about half a minute before the beginning of totality, when suddenly, as if the wings of darkness or the shadow of an impenetrable cloud had passed over the earth, the darkness became so great that the operators could not read the scales on their thermometers, and the photometers indicated a light considerably fainter than that of the full moon. Lanterns had to be employed by all the operators in order to carry on their observations. Venus appeared in all her radiance to the east of the sun, and Mercury shone out about six degrees to the west, as conspicuously as a star of the first magnitude. * * As the corona flashed into view there was a murmur of admiration from the spectators. It seemed to be a halo of light, whose rays were different in length, and variable in brilliance. From the northeast limb of the sun a long, conical mass of light, perhaps half the diameter of its disk, shot off in the direction of the zodiac. From the opposite side a similar smaller mass projected, and from the north of its disk, a column of burning rays shot, something like a miniature auroral light. Between these was a circle of smaller rays, which made the ring complete. But the phenomena which attracted most attention, were the long points of rose-colored light,—as distinguishable from the white light, even with the naked eye, as a white rose from a red one. From the southern point of the sun's disk appeared a tongue of flame about one-twelfth of the sun's diameter in length; this was plainly visible with the unassisted eye. Through the telescopes it assumed the appearance of a fleecy cloud illuminated by a pink light. From the eastern side of the sun were two prominent crimson points. From the west and south were two smaller ones, and one which assumed the shape of the two horns of an ox, proceeding from the same point. This latter was cut off by the sudden appearance of the sun's edge, and the conclusion of the totality of the eclipse. Instantly Mercury was invisible, and Venus disappeared in three minutes and forty-five seconds afterward.

The calculations of the astronomers in regard to the time of the commencement of the eclipse were almost exactly verified; but the duration of the total eclipse was about five seconds less than the calculated time; which would throw the center of total obscuration about seven miles farther east than was estimated.

Prof. Harkness made elaborate observations with the spectroscope. He found that of five of the rose-colored protuberances, each gave a different line. Dr. Curtis took photographs of the sun at short intervals,—in all, 123; two of which were during the totality. Prof. Eastman made observations every ten minutes with the thermometer, barometer, photometer and actinometer.

It is believed that this occasion has added important facts to science. We shall look with interest for the official reports.

Mineral Caoutchouc.—The *Chemical News* says this substance has been recently found in South Australia exuding from the sandy soil and collecting in quantity upon the surface. It yields 82 per cent. of oil. According to the analysis of the late Professor Johnston, it is a hydrocarbon, containing from 83·7 to 85·5 per cent. of carbon, and from 12·5 to 13·28 per cent. of hydrogen. The variety found in Derbyshire has a specific gravity varying between 0·9053 to 1·233; the substance is highly inflammable, its color blackish brown, its luster resinous.

To Obtain Oxygen without Employing Heat.—Böttger takes equal weights of peroxide of barium and peroxide of lead, and having mixed them together adds some very weak nitric acid. Active effervescence immediately commences, and it is found that the gas evolved is pure oxygen. It will be seen that, according to Schönbein's theory, one of the peroxides employed evolves ozone, and the other antozone, or oxygen in the positive and the negative states, and these combine as they are given off to form neutral or ordinary oxygen. This process is of more scientific than practical interest; but it may be useful perhaps when small quantities of oxygen are required for medicinal purposes.—*Artisan*.

To Deodorize Bi-sulphide of Carbon.—A new French process is as follows: The bi-sulphide is washed several times with distilled water, and is then transferred to a large retort containing lime. After twenty-four hours' contact with the lime, it is distilled, and received in a flask partly filled with copper turnings (previously roasted to remove all fatty matter, and afterwards reduced by hydrogen), when all odor, except a faint ethereal one, will have been taken away. The lime becomes highly colored. By the aid of this deodorized bisulphide, Millon and Commaille have succeeded in separating the perfume of milk, and have even detected it in the odor of particular flowers (*Smyrnium olusatrum*, for example), which had been eaten by the cow.

New Mode of Producing Oxygen.—Messrs. Montmagnon and Delaire produce oxygen from the atmosphere by means of charcoal and water. They state that 100 litres of fresh charcoal, when exposed to atmospheric air, will absorb 925 litres of oxygen and only 705 litres nitrogen. If the charcoal so saturated with gas is then saturated with water there will be expelled 650 litres of nitrogen and only 350 litres of oxygen. Thus 575 litres of oxygen and only 45 litres of nitrogen are left in the charcoal. These gases they remove by the means of an air pump, when the charcoal is again ready to absorb oxygen and nitrogen from the air.

The Apomecometer.—A new instrument for measuring vertical heights, as for instance of towers or spires, is thus described by the inventor: "It is constructed in accordance with the principles which govern the sextant, viz., as the angles of incidence and reflection are always equal, the rays of an object being thrown on the plane of one mirror, are from that reflected to the plane of another mirror, thereby making both extremes of the vertical height coincide exactly at the same point on the horizon glass; so that, by measuring the base line, we obtain a result equal to the altitude."

The North Polar Expeditions.—There are five different parties now in the high latitudes. Three of these are German and two are English. The first, Rosenthal's, from Bremerhaven Feb. 21st, was heard from, May 9th, at 74° N. The second, Lamont's, sailed from England April 20th. The third, Capt. Palliser's, also sailed from England in April. The fourth, Rosenthal's also, sailed from Bremerhaven May 23d. The fifth left Bremerhaven June 15th.

The Power of Electro-Motors.—Mr. Henry Wilde says that he has found that whenever a voltaic battery and a magneto-electric machine will melt an equal length of wire, the power which these electro-motors have to overcome external resistance is also equal. And generally, the power of an electro-motor (whether voltaic or magneto-electric) to overcome external resistance, is directly proportionate to the length of wire which it will melt.

Decomposition of Chloride of Iron. When heated to 70° Cent., chloride of iron is decomposed into hydrochloric acid and soluble oxide of iron. M. Debray sends a note upon the subject to the French Academy. He finds that the salt has undergone an entire change at that temperature, giving, instead of Prussian blue with the ferrocyanide, a pale greenish blue. Solutions of common salt cause a gelatinous precipitate of sesquioxide of iron.

Farming and Gardening.

Tree Culture Without Irrigation.

Some people entertain tbe erroneous idea that trees will grow and thrive in this conntry without irrigation only on bottom lands. Recent experiments, however, in various parts of the footbills bave shown that this is a great mistake. Tbe *Banner*, pnblished at Ynba City, says that a numher of persons in that vicinity have fnlly demonstrated the fact that trees planted in good soil either npon high lands or in the plains will grow and flourish without irrigation. "One gentleman, Mr. J. Onstot," says the *Banner*, "living a few miles west of Yuba City, has planted and successfully grown a large variety of fruit, shade and nut-hearing trees, and without the aid of irrigation. Mr. O. is satisfied that the now dry-appearing plains composing the rich deep soil npon wbich onr best grain is produced, can be made to hriug forth a forest of fruitful trees, composing hoth English and black walnut, figs of every variety, apples, peaches, mnlherry, etc. He has set an example, and wishes his neighbors to follow suit. The extensive planting of trees would make, in a few years, a beautiful and lovely landscape of what now appears as a dry plain."

If it can be satisfactorily sbown that trees *can* be snccessfully grown without irrigation upon the plains of the Sacramento and San Joaquin valleys, their growth shonld he enconraged hy State bonnties or in some way, in order to secure their more general planting. There is quite as mnch, and even more, necessity for the adoption of snch a policy bere than there is in Illinois, where tbe law has for some time provided that any person shall he released from taxation for ten years, or $100 worth of property valuation, for each acre of forest trees planted; and for each acre of frnit trees planted, from $50 valuation for five years. The same provisions as to frnit trees are applied to the planting of shade trees and hedges along the highways. It is asserted that there are now maple forests in several connties, and sngar made, where, fifteen years since, was notbing but prairie grass and hazel shrnhs.

Sweet Potatoes at the North.—Mr. J. Allen, of Conneant, Obio, writes to the Farmers' Club as follows: "Hundreds of thousands of sweet-potato plants are grown here in warm and sheltered side-hill gardens for home nse, and for sending by mail or express to nearly all the States. Last year I procnred some seed potatoes from West Jersey, and find that they produce potatoes of a better quality than those tbat have been grown here for several years; and I think that they should he renewed often from that locality of Delaware; for, as good potatoes are grown there as any place." The *Hearth and Home* calls attention to Mr. Allen's letter as showing that the sweet potato is prodnced fnrther north than many suppose. It is a fact wbich should be more generally known that very good potatoes of tbat variety can he raised anywhere, in suitable soil, in tbe Middle and New England States, as far north as the northern line of Massachusetts. We last fall ate very good sweet potatoes raised in Middleboro', Mass., and were told that hundreds of hushels were raised every seaaon in that town; and, if we are not mistaken, their production is becoming quite general tbrougbont that part of the State.

Grapes.—California, it is said, is now cultivating more than 300 varieties of grapes. The total number of vines now growing in the State is set down at thirty millions.

The wool clip of Santa Barbara this year, according to the *Press*, will reach 1,200,000 yonnds—600 tons—which, at tbe current price, is worth $240,000.

A Singular Fact.

The peacb, says the *Waverly Magazine*, was originally a poisonons almond. Its fleshy parts were nsed to poison arrows, and the fruit was for this purpose introdnced into Persia. The transportation and cultivation, bowever, not only removed its poisonous qualities, but produced the delicious fruit we now enjoy.

An excbange, copying the above, states the further fact that where the peach is planted in certain localities [too far nortb] it deteriorates to a coarse, thin, hard-stone almond, which sometimes, hnt not always, acts as a poison to persons eating it, and asks: "Can any of our friends throw light upon the subject?"

In reply to the query, we wonld state that a notable qnantity of bydrocyanic (prnssic) acid, (one of the most deadly poisons known) is found in tbe peach—fruit, pit and leaf. This poison, in fact, is chiefly mannfactured from the bitter almond, a variety of the peach, and the same which might have beeu employed hy the Persians, as stated above, who no donht had some knowledge of manufacturiug this acid. The same acid is also found in the cherry, particnlarly the wild variety.

The reason why persons may sometimes be affected by eating such fruit, while at others they may eat it with impunity, and why cattle are sometimes killed by eating wild cherry leaves, and not at others, is explainable as follows: When the fruit of the bitter almond or tho leaves of the wild cherry are first gathered, they contain but a very small portiou of acid; bnt as soon as maceration has been effected, tbereby breaking down the walls of the cellular tissue, and allowing free access of air, this poisonous substance is rapidly generated. Hence the bitter almond may be eaten with impunity immediately after being plucked; but if eaten after the pnlp has been broken up and allowed to stand thirty-six or forty-eight hours, nnpleasant, if not dangerons results may follow. Cattle may safely browse upon wild cherry leaves directly from tbe tree or immediately after they have been taken therefrom; hut if the leaves are allowed to be trampled upon, or even *dry*, for a day or two, in tbe shade, prussic acid is developed in such quantity as to often result in the death of snch cattlo which feed freely npon them. The somewhat agreeable bitter principle in tbe peach-pit or wild cherry-leaf, proceeds from the prussic acid which they contain.

A Curious Melon.—In a tract of conntry in the sonthwestern part of Africa, distinguisbed for its dry hut rich soil, a gigantic perennial melon has been discovered, wbich is a most delicions, wholesome frnit, and which is largely consumed by the native inhabitants as food. In order that this melon may flonrish, it is necessary that it should strike its roots down throngh the sand *thirty* feet to reach permanent moisture. This it does, and grows in great luxnriance wbere all else is shriveled and parched by heat. But this is not all. If it were simply a huge melon, with smooth and delicate skin, every one would he destroyed by wild beasts before half matnred. To prevent this, natnre has armed its outer rind with a coveriug of long, sharp, terrihle thorns, which so lacerate the mouths and noses of animals that they are glad to leave them alone in all their tempting freshness. Man, with his hands and sharp knives, finds little difficulty in opening the lnscious fruit. The natives have no necessity for putting fences ahout their melon patches, for the plants are self-protective. *Boston Journal of Chemistry.*

Cheating in Hay.—Several complaints have been made in this city and other localities of cbeating in hay, by placing stones in the middle of the bale. A stable keeper in San Josć made the latest discovery of that kind.

Flax Culture in Oregon.—The Pioneer Oil Company, of Salem, Oregon, have several thousand acres of flax under engagement to be harvested for the aeed. It is said to he a more profitable crop, there at least, than wheat or oats.

How to Grow Lima Beans.—A correspondent of the *Rural New Yorker* recommends the following method of raising Lima heans, which may be found useful to those who desire to mske the most of a small piece of ground: "Take an ordinary nail-keg, as near water-tight as possible, hore quarter-incb holes in every third stave an inch from the bottom. Spsde and pulverize tboroughly a circle of ground tbree feet in diameter. Place the keg in the center, filled nearly full of good stable-manure, well pounded in; plant the hesns end downwards, two incbes deep, eight inches apart, and as many incbes from the keg, all aronnd it; ponr on a pail of water, or as mucb as tbe mannre will absorb, wbich may be repeated once a week in dry weather. Place five or six poles a foot from the keg, letting the tops meet over it, and the work is done. Four hills will be fonnd to raise enough for any family. I have adopted the keg and pole encumbers, and find it works splendidly, as you can pick them without distnrhing the vines."

Watering Plants.—A writer in an exchange says: "Plants set against walls and piazzas freqnently suffer from want of water, at this season, wheu even ground near them is quite wet. Draw away the soil from each plant so as to form a hasin; fill in with a hucketful of water, allowing it time to soak gradnally away, and when the surface has dried a little, draw in loosely the soil over it, and it will do witbout water for some weeks This applies to all plants wanting water tbrough the season. If water is merely poured on the surface, it is made more compsct by the weight of water, and tbe harder the soil becomes the easier it dries; and the result is, the more water you give the more it wants."

To Grow Horse Hair (?).—Oftentimes the owner of a valuable horse discovers a spavin or curh make its appearance; a blister is applied, and many times the bair comes off, which, of course, the owner wishes to have grow out as soon as possible. Now, a gentleman of Deumark, N. Y., has furnished a recipe which he claims will cause tbe bair to start right away on bare spots cansed hy blistering, harness gall or otberwise. Take an old boot or shoe, place it on the fire, burn to a coal, pulverize, and mix with hog's lard to a thin paste. A few applications of the paste to the hare place will do the work. Try it.

Lemons from Alameda.—A lot of lemons were received in this city last week from tbe garden of Mrs. Dr. Hall, in Alameda. They sold readily for $1.50 per dozen, and are said to have heen the first of this variety of fruit ever brought to this market which was raised north of Los Angeles.

Sensible.—A largo portion of the farmers in tbe neighborbood of Hayward's bave expressed a determination to put the chief portion of their lands in fruit and vegetables the ensuing year.

New Incorporations.

Blue Mountain Tunnel and Lode M. Co.—August 12. Wbite Pine.

Meetings, Elections, Etc.

Hesperian Land, Savings and Loan Association. Aug. 17. President, Chas. Avery; Treasurer, John McKewen; Secretary, George Strasser.

Great Park H. A.—Aug. 17. Trustees: Cyrus Palmer, Adolph Unger, Richard F. Knox, Wales L. Palmer, A. G. Styles, D. N. Hawley and B. P. Avery. President, Cyrus Palmer; Secretary, Ira G. Hoitt; Treasurer, David N. Hawley.

Sierra Iron Co.—Trustees: N. Lnning, James M. McDonald, L. E. Pratt, Wm. S. Day and Caleh T. Fay.

Paul Reservation H. A.—August 17. Trustees: W. G. Doolittle (President), C. D. Wheat (Vice President), F. B. Wilde (Treasurer and Secretary), J. W. McKenzie, N. F. Flood, John Heuderson Jr., H. B. Sheldon and W. G. Finch.

Garden Tract H. A.—Aug. 17. President, A. S. Gonld; Vice President, John P. Winchester; Treasurer, W. G. Doolittle; Secretary, F. B. Wilde. Trustees: A. S. Gould, W. G. Doolittle, John P. Winchester, J. K. C. Hobbs, F. B. Wilde, J. T. Bradford and W. G. Finch.

California Art-works for Sale.—Wm. Keith, has placed on exhibitiou at the Mercantile Library, prior to the sale at auction, a collection of original Oil Paintings, illustrative of Scenery in California, Oregon and Washington.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

For the Week Ending August 10th.

Mode of Making Corundum Wheels.—A. W. Calder, San Francisco, Cal.—93,413.

Improved Truck Plow.—M. Mickelson, Ashland Mills, Oregon.—93,464.

Carriage Pole and Shafts.—Angustns Moore and John Aylwerd, San Josć Mission, Cal.—93,466.

Process for Forming the Hub and Spokes of Wrought Iron Wheels.—Tbomas Ryan, Scott Bar, Cal.—93,483.

Steam Cultivator.—Andrew J. Stevens, San Francisco, Cal.—93,494.

Device for Operating Cocks of Steam Cylinders.—Wm. H. Woods, San Francisco, Cal.—93,509.

Metallic Stuffing Box.—W. H. T. Clark, San Francisco, Cal.—93,518.

The object of this invention is to provide an improved stuffing-box, or packing for the piston rods of steam engines, pumps or propeller shafts, and for making a tight joint in all cases wbere there is a rod or shaft working, partly within a medium under pressure, and partly outside of that medium. The stnffing-box is constrncted with a gland or follower, as in the cylinder head of a steam engine. Within this stuffing-box is placed a short cylinder with a cover at each end, and containing the packing rings, which may numher ten or more, five in each of the two compartments, into which the cylinder is divided. The piston-rod passes through tbe ends of this short cylinder, and also throngh the contained rings, which are cut at various points on their circumference, aud are kept close to the rod hy encircling springs, so that the rod passes perfectly steam tigbt through the cylinder. The two ends of the packing cylinder may be faced or have an elastio packing, which makes it steam tight against the interior face of the gland, and the end of tho stuffing-hox. The openings through tbe gland hy wbich the rod passes out from the stuffing-hox, are considerably larger than tbe rod, so that it will not press against the sides, if any portion of tbe machinery gets out of line.

Passenger Register and Railroad Calendar.—John C. Hackett (deceased), Sacramento City, Cal. [Address Henry Hackett, Gold Run, Cal.]—93,531.

This invention is designed to provide an improved mechanism to be attached to railroad-cars, by which the various stations along the line may be indicated to passengers, without their names being called out by tbc conductors. By tbe same device the number of passengers that enter a car is also indicated, as well as the station where they enter and leave. To accomplish these objects, circnlar disks are provided upon which the names of the various stations are painted. One of these disks is placed hy the side of each seat, and within tbe wall of tbe car, with a small longitudinal opening in front, and all, in any given car, are turned simultaneously hy brakemen, so that the name of each atation is snccessively brought before the opening aforesaid, where it may be read by each passenger as he remains in his seat. Springa and levers are also employed to so connect each aeat with its appropriate disk, that when a seat is turned down for occnpancy hy a passenger, the act is recorded on a strip of paper connected with the disk. This invention was more fully described and illustrated in our issue of June 27th, 1868.

Mortising Chisel.—Carl Hinz, San Francisco, Cal.—93,534.

The object of this invention is to provide an improved chisel to he used for cutting mortises designed for receiving pulleys or other pieces of mechanism, wbich require a shallow mortise cut around the border of the main one, for tbe purpose of receiving the flange or other device by which the pulleys are attacbed to the timber. The invention consists of a mortising chisel having a shorter adjustable one above it, and placed far enough from it to give the desired widtb of shallow mortise. By adjusting the shorter chisel, any desired depth or width of shallow mortise can he given; the whole heing performed at one operation and with great accuracy and celerity.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, August 21, 1869.

Financial.

The charity of our business men has been severely tested within the past week by the concession of very important financial aid to the firm of J. Seligman & Co., while like assistance has been withheld to other banking firms, and, proportionably, to the whole business community dealing with those banks. Application was made to the Treasury Department for permission to deposit $3,000,000, in gold, in the New York Sub-Treasury, and draw the same amount from the Sub-Treasurer in San Francisco, who holds between $11,000,000 and $12,000,000 in coin, paid by the merchants of this city to the Government for customs duties. To this reasonable and business-like request, which, if complied with, would have saved 1½ per cent.—equal to $33,750 on the whole amount—to the Government, no reply has been received up to date; but upon a like application from J. Seligman & Co. the amount of $500,000, in two transfers, was turned over to that firm upon telegraphic order from Washington. The reason for this special favor has not transpired, but we are very far from condemning the act of that firm, which has only had the good fortune to succeed in obtaining what everybody else was trying to get. But whether the authorities at Washington have done justice to the business community of San Francisco in this transaction is another question, and one which cannot be properly answered until the reasons have been made known. Until then we do not choose to indulge in remarks which may be unjust or ill founded.

We note a large private remittance of $250,000, in round numbers, direct to France. A French banker, who has long been established in this city, became displeased at the small amount of business he was doing in proportion to the capital involved, and has determined to transfer his operations to the other side of the Atlantic. The remittance in question was the first installment.

Our local money market remains hard and distressed. The discount line is in a sickly condition; not because the banks are unwilling to accommodate, but because the coin supply is deficient. Bullion is not abundant, while the demand is active. We quote gold hars at 850; silver bars range from par to ½ per cent. discount; currency bills on Atlantic cities are charged 31@31½ per cent. premium on gold; coin drafts, payable at sight, pay ¾ per cent. premium; telegraphic transfers are effected at 1¼ per cent. premium; sterling exchange is quotable at 48¾d, and commercial exchange is done at 49½@50d; Mexican dollars command 6@7 per cent. premium; gold in New York, August 19th, 133¼; legal tenders in San Francisco, 74@74¾.

The exports of Treasure from Aug. 1st to date have been as follows:

Aug. 4—Per Oregonian—		
To China	$346,973 30	
To Japan	326,403 93	
		673,377 23
Aug. 1 to 5—Overland to New York		63,246 65
Aug. 9—Per Sacramento—		
To New York	$ 48,047 15	
To England	449,987 83	
To Central America	181,625 42	
To Panama	20,000 00	
		679,660 40
Aug. 6 to 11—Overland to New York		86,503 33
Aug. 18—Per Golden City—		
To France	$260,290 47	
To Central America	10,000 00	
To Panama	10,000 00	
		280,290 47
Aug. 12 to 19—Overland to New York		20,000 00
Total since August 1st, 1869		$1,803,078 08
Previously this year		23,616,473 70
Total since January 1st, 1869		$25,419,551 78
Corresponding period, 1868		25,202,384 83
Increase this year		$ 217,166 95

When our Chicago commercial visitors arrived at White Pine, with a view of estimating the volume of its argentine product, and to determine, if possible, the nature and conditions of the traffic the Chicagoese could hope for from that district, they were frightened out of investing, by the stand which the miners had taken. They saw a large body of men refusing to work for four dollars, gold, per day, when operatives in the lead mines of Illinois were asking and receiving about half that amount. They saw, furthermore, that although the country is unprecedentedly rich in silver, San Francisco capitalists exhibited a strange lukewarmness in its behalf. Piles of ore, averaging about $80 the ton, lay heaped on all sides, but the facilities for extracting the precious metal were disproportionably few and scarce. Those adverse features were apparent—plain to the sight; but the marrow remained hidden from view, and did not suggest itself to the superficial gaze of the Chicagoese. They did not stop to consider that nearly all the mills are old, second-hand affairs, incapable of steady working, and that the district can keep nearly four times as many good mills in constant operation. They did not wait to inform themselves that, despite the very inadequate means at hand, White Pine will turn out $4,000,000 worth of silver this year; nor did they arrive at the cheering knowledge that, under favorable circumstances, with their capacities in full development, the White Pine mines are capable of yielding from $10,000,000 to $12,000,000 of silver per annum. While boasting their ability to furnish machinery and other articles cheaper than San Franciscans, they delicately hinted an indisposition to make the venture, on the purbliud plea that White Pine was very distant from Chicago and the people of that district were so much strangers to Chicago dealers that credit could scarcely be expected. Yet, if their own protestations are to be believed, neither distance nor newness of acquaintance were to be insuperable obstacles against extending their trade. Their visit to San Francisco, far west of White Pine, was for that very object. They were going to skim the cream of trade from the Great Basin and all other points between Chicago and this city. They were even to invade Nevada, and carry off all its bullion, as the reward of their overmastering enterprise. They evidently had no clear perception of San Francisco; probably thought it was a bloated village devoid of manufacturing resources, and almost wholly dependent upon Atlantic cities for all manufactured articles. A visit disabused them of such false impressions; and it is quite likely that the change in their tone toward the White Pines was more due to their suddenly acquired knowledge of incapacity to compete successfully with San Francisco, than to any indisposition on their part to exchange manufactured goods for silver bullion. Most people will indulge, now and then, in a little bombast, and the Chicagoese are no exception to the rule. White Pine is settling down to its real work. The foam and bustle under which it was concealed, for a time, have been wiped off, and its real merits are beginning to exhibit themselves in tangible form. Machinery and capital are needed to bring out and utilize its vast resources; but these will be supplied liberally in due time, and every facility will be given to unload the teeming earth of that district from its silvery burden.

City Stocks.

This class of securities has not attracted any great attention during the brief period since our last reference, and transactions made came from private hands.—The California Steam Navigation Co. dishursed its usual 1 per cent. dividend on their capital stock on the 16th inst.

Mining Share Market.

Mining stocks are in much better favor than at the close of our report last week. Most shares show a decided advance, but the transactions are not on such an extensive scale, more caution being exhibited by all classes of dealers. The stringency of the money market still greatly retards stock operations, and in many instances during the falling market it went quite hard with many dealers, who were obliged to sacrifice stocks which could otherwise be held. An improved condition of the money market is looked for within sixty or ninety days.

HALE & NORCROSS—exhibits a very considerable improvement. For the week ending August 14th, the upper mine yielded 261 ½ tons of ore, and the lower 321¾, making a total of 583½ tons. Previous week the yield amounted to 690½ tons. They delivered 1,008 tons, leaving on hand 8322½ tons of low grade ore. Work on the fifth level has been interfered with on account of retimbering the shaft. The various breasts on the fourth level present no material change. A raise has been made in the old vein a few feet south of the northern boundary line from the third level, which is now up some eighty feet. From this raise three cross-cuts have been made at equal distances, and these openings have disclosed a vein of ore from four to seven feet wide, the average assays showing $51 to the ton. In the old mine, on the 400 level, the winze in the south drift is down twenty feet and in ore, the width of which is reported to be 3½ feet, assaying $47 to the ton.

CHOLLAR-POTOSI—sold at very uniform price, in very considerable amounts. During the week ending August 13th, 1,640 tons of ore were extracted against 1,408 the previous week. The product of the week under review shows that 1,035 tons came from the Bluo Wing locality, and 305 from the New Tunnel. The Blue Wing deposit is looking well and is yielding largely. The new section under the New Tunnel exhibits considerable improvement. On the 13th inst., $30,589 in hullion was dispatched to the office in this city.

GOULD & CURRY—was in moderate request at an advance. During the week ending August 16th, they extracted 347 tons of ore against 377 the previous week. No change of importance has taken place since our previous reference, the ground from which the ore is taken being quite as promising as heretofore. The second station is being re-opened, some seventy feet having been opened during the week under review. The seventh station has been completed, and a drift carried north about nine feet; no signs of ore yet. To date, for the current month, the hullion returns aggregate $11,524.—On the 17th inst. the OPHIR drift had been carried in a total distance of 535 feet; rock getting harder.

The *Inland Empire* of a late date has the following about several prominent White Pine mines: "We made a flying trip to Treasure Hill, and paid a visit to four mines—the Posthole, Eberhardt, Pogonip and Othello, and Original Hidden Treasure. In the Posthole we found a full complement of men at work and rich ore being taken out. This mine had some 265 tons of ore crushed within the last thirty days, the highest grade yielding upwards of $1,600, the second grade $194, and the lowest grade $124 per ton. The Eberhardt had its principal force at work in its great chamber, where more rich ores are exposed than ever before. No work is now being done in the 175-feet level, where rich ore can be taken out whenever workmen are placed there. At the Pogonip and Othello the usual force is employed, and considerable quantities of high grade ore raised daily. No ore from this mine will be reduced until their mill is erected. The company have now on their ground and dumps about 700 tons of ore, which will be increased to thousands, for the ore is in sight, and a tunnel now connects all the shafts and exposes it to view. At the Original Hidden Treasure we saw a number of men at work, but the Superintendent being absent, we did not visit any of the underground workings of this excellent mine We heard, however, that the usual number of men—sixty-four—are employed."—POCOTILLO levied an assessment of $2 per share on the 2d inst.

PAINLESS AMPUTATION.—Mr. H. B. McMasters, of Stockton, had four fingers completely sevcred from his right hand, a few days since, by a circular saw, about which he was at work. He says he did not feel the act of amputation, and was not even aware of it until he saw the blood upon the board where he was at work. He resumed his place in the mill immediately after the wound was dressed.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Cons., Sierra co., Aug. 6, 50c	Sept. 7	Sept. 23*
Black Jacket, White Pine, Aug. 18, 10c	Sept. 17	Oct. 21
Boston, White Pine, Aug. 26, 50c	Aug. 5	Aug. 23
Bucklin, White Pine, July 14, 5c.	Aug. 20	Sept. 10
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Brodt, White Pine, June 23, 25c	July 29	Sept. 4
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 4
Germania, White Pine, July 13, 20c	Aug. 13	Aug. 26
Chester, White Pine, June 29, 15c	Aug. 4	Aug. 25
Cordillera, Mexico, July 23, $1	Aug. 24	Sept. 8*
Central No. 2, Storey co., July 14, $5	Aug. 16	Sept. 4
Crown Point, Storey co., Nev., Aug. 6, $5	Sept. 8	Sept. 24
Daney, Lyon co., Nev., Aug. 5, $1	Sept. 8	Sept. 26
Eclipse Cons, White Pine, Aug. 11, 50c	Sept 16	Oct. 8
Evening Star, White Pine, June 25, 10c	July 31	Aug. 21*
French, White Pine, July 13, 20c	Aug. 13	Sept. 13*
Glenwood, El Dorado co., Aug. 2, 3½c	Sept. 8	Sept. 28*
Gold Hill Q., Storey co., June 29, $1	Aug. 2	Aug. 23
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 30*
Germania, White Pine, July 13	Aug. 13	Aug. 26
Hamilton, White Pine, Aug. 10, 50c	Sept. 10	Sept. 29*
Hercules, White Pine, July 10, 20c	Aug 12	Aug. 27
Hidden Treasure Cons, June 29, 50c	Aug. 1	Aug. 25
Hidden Treasure, White Pine, June 29, 50c	Aug. 4	Aug. 25
Hope Gravel, Nevada co., Aug. 8, $1	Sept. 13	Oct. 4
Hornet, White Pine, July 21, 10c	Sept. 8	Sept 30*
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 24
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Julia, Storey co., Nev., Aug. 4, 75c	Sept. 7	Sept. 23
Kincaid, Tuolumne co., Aug. 4, $2 50	Sept. 8	Sept. 25*
Kentuck, Storey co., Nev., Aug. 5, $10	Sept. 6	Sept. 25
La Plata, Sonora, Mex., July 8, 2½c	Sept 13	Oct. 1
Lucky Ledge, White Pine, July 16, 10c	Aug. 16	Sept 6
Lyon M. & M., El Dorado co., July 21, $2	Sept. 6	Sept. 20*
Mammoth, White Pine, July 16, 50c	Aug. 23	Sept. 13
Mazeppa, White Pine, June 30, 10c	Aug. 5	Sept. 11
Magenta, White Pine, June 23, 10c	July 29	Sept. 4
Mammoth Cave, White Pine, July 12, 10c	Aug. 19	Sept. 23
Morning Star, Alpine co., July 21, $1.50	Aug. 31	Sept. 15*
Marlborough, White Pine, July 19, 5c	Aug. 24	Sept 13*
New Era, Amador co., July 13 40c	Sale Sept. 1	
Ophir, Storey co, Nev., July 23, $3	Aug 25	Sept. 16
Oriental, Sierra co., July 21, $2	Aug. 21	Sept. 6
Pocotillo, White Pine, Aug. 2, $2	Sept. 6	Sept. 27
Phœnix, White Pine, July 12, 15c	Aug. 12	Sept 30
R. R. M. Co., Humboldt, Nev., July 27, 20c	Sept. 13	Oct. 1
Segregated Belcher, Nev., Aug. 5, $1	Sept. 9	Sept. 27
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug. 28
Silver Eagle, White Pine, July 14, 25c	Aug. 16	Sept. 6
Silver Sprout, Inyo co., July 27, 50c	Aug. 31	Sept 20*
Tecumseh, Calaveras co., July 22, $2 50	Aug. 24	Sept. 15
Treasure Grove, White Pine, July 27, 50c	Aug. 30	Sept. 18
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Aug. 30*
Virginia, No. 2 White Pine, July 21, 25c	Aug. 26	Sept. 11
Wells, White Pine, Aug. 10, 30c	Sept. 17	Oct. 7*
West California, White Pine, July 10, 10c	Aug. 7	Sept. 25
Yosemite, Humboldt co., Nev., July 2, 50c	Aug. 7	Aug. 24*
Yellow Jacket, Storey co	July 19. $10	Aug. 18	Sept. 17

MEETINGS TO BE HELD.

Senator, Storey co., Nev	Annual Meeting Aug. 25*
West Point, White Pine	Annual Meeting Aug. 25

LATEST DIVIDEND.

Amador Co., div. $8 per share	Payable August 7, 1869
Alpha Cons, Storey co., Nev, div. $2	Pay. June 19, 1868
Bacon, Storey co., Nev., div.	Payable June 19, 1868
Caney, preferred Stock, div. 3½ per cent.	May 15, 1869
Crown Point, dividend, $7.50	Payable Sept. 12, 1868
Chollar Potosi, div., $2	Payable August 6, 1869
Eureka, div. $5	Payable July 10, 1869
Empire M. & M., Nev., dividend $6.	Payable May 15, 1867
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Golden Chariot, Idaho, div. $3	Payable June 15, 1869
Golden Rule, Tuolumne co, div. 50c	Pay. July 26, 1869
Hale & Norcross, div. $6	Payable July 10, 1869
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 1, 1869
Keystone, Sierra co., div., $32	Payable May 6, 1869
Kentuck, div., $20 per share	Payable Jan. 10, 1869
North Star, dividend, $15	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Unassessable, div.	Payable June 18, 1868
Sand Spring Salt, dividend $1	Payable Jan. 5, 1869
Sanguinco, Silver City, dividend, $2 50	Payable Dec. 19, 1868
Savage, Virginia, Nev, dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. August 10, 1869
Virginia & G. H Water Co. Dividend, payable April 16, 1869	
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, August 20, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	—	—
United States Bonds, 5 20s, 1894	—	—
United States Bonds, 5-20s, 1862	87	89
Legal Tender Notes	74¼	—
California State Bonds, 7s	95	—
San Francisco Bonds, 10s, 1851	par & int.	
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	83	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s	par & int.	
San Francisco City and Co. Sch'l B'ds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	75	77
Solano County Bonds, 10s, 1894	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	53	56
State Telegraph Co	25	—
Spring Valley Water Co	60	61¼
GAS COMPANIES.		
San Francisco Gas Co	81¼	90
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	69	70
Central Railroad	54	58
North Beach and Mission Railroad	67½	69
Front Street, Mission and Ocean Railroad	11	13
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	88	91
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	150	160
MINING STOCKS—WASHOE DISTRICT.		
Alpha	17	17¼
Baltimore American	—	—
Belcher	20	20½
Bullion, G. H	8	10
Crown Point	27½	28
Colc (Va.)	—	—
Confidence	30	39
Consolidated Virginia	—	110
Chollar-Potosi	18	18½
Daney	1¼	1¾
Exchequer	8	14
Empire Mill and Mining Co	38	50
Gould & Curry	85	88
Gold Hill Quartz	30	45
Hale & Norcross	110	111
Imperial	45	49
Julia	—	3
Justice and Independent	3	5
Kentuck	175	176
Lady Bryan	33	45
American	59	60
Occidental	17¾	18
Ophir	15	16¾
Overman	80	81
Segregated Belcher	9½	10
Savage	54	54½
Sierra Nevada	7¾	8¾
Union	—	—
United States	—	—
Yellow Jacket	46¾	47
MISCELLANEOUS MINING STOCKS.		
Amador (California)	250	264
Aurora, White Pine	4	—
Eureka, (California)	210	—
Golden Chariot (Idaho)	25	30
Silver Cord (Idaho)	1	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, August 20, 1869.

Flour, Extra, ₱ bbl	$5 50	@	$6 00
Do. Superfine	—	@	5 00
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 40	@	1 60
Oats, ₱ 100 lbs	1 50	@	1 65
Barley, ₱ 100 lbs	1 05	@	1 35
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	1 10
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14¾	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	20
Do. Rio	—	@	19
Tea, Japan, ₱ lb	76	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5¾	@	6¾
Coal Oil, ₱ gallon	45	@	46
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	40	@	50
Isthmus Butter, ₱ lb	30	@	35
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	45	@	50
Lard, ₱ lb	16	@	17
Ham and Bacon, ₱ lb	14	@	16
Shoulders, ₱ lb	8	@	9

Retail Prices.

Butter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	30	@	40
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	60	@	70
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1½	@	2
Potatoes, Sweet, ₱ lb	3	@	5
Tomatoes, ₱ lb	3	@	6
Onions, ₱ lb	6	@	—
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	7
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	18
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O	7	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, August 20, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2¾c ₱ lb.

Scotch and English Pig Iron ₱ ton	$35 00	@	$36 00
White Pig ₱ ton	34 00	@	35 00
Refined Bar, bad assortment, ₱ lb	— 03	@	— —
Refined Bar, good assortment, ₱ lb	— 04	@	— —
Rolled, No. 1 to 4	— 04¾	@	— —
Plate, No. 5 to 9	— —	@	— 04¾
Sheet, No. 10 to 13	— 04¾	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5¾
Sheet, No. 24 to 27	— 05	@	— 6¾

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb

Sheathing, ₱ lb	—	@	26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— —	@	— 35

STEEL.—English Cast Steel, ₱ lb — — @ — 15

QUICKSILVER.—₱ lb — 55 @ — 60

LEAD.—Pig, ₱ lb — 7½@ — 8

Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
ZINC.—Sheets, ₱ lb	— 10½	@	— 11
BORAX.—California, ₱ lb	— 45	@	— 50

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Aug. 20, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

			Per ton.						*Per ton.*
12	per cent.	ore	$16 00	22	per cent.	ore	$43 56		
13	"	"	18 62	23	"	"	46 45		
14	"	"	21 20	24	"	"	49 33		
15	"	"	23 35	25	"	"	52 22		
16	"	"	26 24	28	"	"	55 11		
17	"	"	29 12	27	"	"	58 00		
18	"	"	29 91	28	"	"	60 80		
19	"	"	34 90	29	"	"	63 77		
20	"	"	37 78	30	"	"	66 66		
21	"	"	40 67	31	"	"	69 55		

These prices, we believe, will be found substantially correct, and can be realized at this date.

TO MEND PLASTER CASTS.—S. T. Clements writes to the *Dental Cosmos* that although wax and resin, shellac varnish and liquid silex are recommended for mending plaster models, neither, in his experience, can compare with sandarac varnish. Saturate the broken surfaces thoroughly, and press them well together. Allow it to dry, and the model will stand all the manipulation required.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Examination of Mines.—*Chronicle*, Aug, 7th:—Messrs. Ensign and Welch visited our most prominent mines on Friday last. The Morning Star was found to he in excellent condition, with a large body of ore in sight in the lower level, and about two hundred tons on the dump. The Tarshish is in good condition, hut no work is going on. At Silver Mountain, the Pennsylvania and I. X. L. were examined for San Francisco parties. Mr. Welch thinks the I. X. L. will prove valuable if properly worked.

The *Miner* says: "We understand that Mr. Welch in very plain terms expressed his conviction that the Pennsylvania boys were wasting their time in making further explorations there.

It is thought that if one or two more mines like the Morning Star should he opened near hy, so as to furnish sufficient ore, it would be best to put up extensive smelting works.

AMADOR COUNTY.

Anaconda.—We learn that this mine is still improving. The mill is now running on some exceedingly rich rock.

Hoisting Works.—Mr. J. A. Faull is erecting steam hoisting works on the old Amador mine at Amador City. We learn that they will he ready for use in about two weeks.

The Coney Mill.—*Dispatch*, 14th: All work was suspended at the Coney miue and mill, near Jackson, a few days ago, and all the employés discharged.

CALAVERAS COUNTY.

Lower Rich Gulch.—*Chronicle*, 14th: Alexander & Co. keep their 10-stamp battery running day and night.

Petticoat.—The chimney recently struck at the Petticoat mine at Railroad Flat, in the 200-foot level, proves to he uine feet in width. How far it extends in length is not yet known, but the level has already been run 40 feet. The rock is exceedingly rich, the probahilities being that it will yield $30 per ton hy working process.

Palomo.—The rock is paying considerably more than expenses. The shaft is down 200 feet. The indications are more favorahle than ever. The 16-stamp battery is kept constantly employed. Twenty more stamps are to he added when the shaft is sunk 200 feet deeper.

NEVADA COUNTY.

North Star.—Grass Valley *National*, Aug. 13: Mr. Hoyt, the Supt. is getting the mine in good working order. The dump-pile contains some very rich ore. There is less water in the mine now than ever before—in fact scarcely enough to keep the pumps going. The mill has heen put in apple-pie order, and will he started next week, when it is expected that a sufficient supply of rock will he on hand to keep all the stamps going day and night.

Allison Ranch.—The company is laying a foundation for the machinery to be put up at the middle shaft, to work the 16-inch pump. A 14-inch pump is now heing used in the new shaft, which keeps the mine dry to within a hundred feet of the hottom. Very rich ore, which will average over $200 per ton, is heing taken from this shaft. The ledge is only six inches thick.

Wisconsin Mine.—Same of 16th: One of the owners informs us that the company have commenced an erection of a mill for the purpose of working their own ore. They have worked dowu ou their ledge to a depth of 460 feet.

Items.—*Union*, 15th: The Eureka and Idaho work ahead without changing, and will give their usual dividends next month, provided the hanks helow will let out coiu enough to pay for the bullion. The Empire is taking out fair rock. There is no diminutiou of activity in outside prospecting, though we have no new strikes to chronicle.

Ben. Franklin.—Niuety-six loads of quartz from this mine yielded at Beu. Macauley's mill $4,300.

The Ridge.—*Transcript*, Aug. 17th: At San Juan Hill there is hut little being done. At Sebastopol, the American Co. ou Manzanita Hill has hought up eight or nine other miniug claims, and now owns about all the grouud on the hill. They now have three hedrock tunnels, and men are engaged, night and day, in ruuning oue of these in for the purpose of getting up under the new hanks. Thirty to forty men are coustantly employed, and four pipes are playing against the hauks, which are now 180 feet in hight. The cement from the channel is very hard, and au immense quantity of powder is used in blasting. The harder cement is worked in an 8-stamp mill, aud the company has hlacksmith shop, office, melting furnace and other buildings on the grouud, so that the work, even to the melting of gold into bars, is done on the ground. The yield of this mine last year was $149,000, and for a long time the yield after each run has been so uniform that for every 15 or 16 days of ten hours, from $7,000 to $8,000 can he counted on.

The Buckeye Hill claims are below Sweetland. The company is running a hedrock tunnel for Sweetland Creek, which will be 1,800 feet long. In the tunnel they employ six men day and night, and 22 at the washing, using about 500 inches of water. After the last run of six weeks the claim yielded $18,000, which is about an average. This company has an ahundance of ground, and some controversy arising, they recently bought the Granite Tunnel ground, paying therefor $60,000. The company recently had an offer of $180,000 for their ground.

At Sweetland the Kentucky Co. have fine claims on the channel. Fifteen men are employed, and 500 inches of water used.

At French Corral we learn that five or six claims are heing worked. Mr. Pollinier is putting up a 10-stamp mill.

PLACER COUNTY.

The Evening Star.—*Herald*, Aug. 19th: This mine, owned hy Heenan, Taylor, Lowry & Co., made a crushing of 33 tons some weeks ago which yielded in gold $1,307, making about $40 to the ton.

SIERRA COUNTY.

New Quartz Mill.—*Messenger*, 14th: Ned Leonard has hought the old Slug Cañon quartz mill, and intends erecting a new mill opposite the foundry, using such parts of the machinery of the old mill as are suitable. Workmen are preparing the foundation. The power will he derived from a center discharge wheel.

TRINITY COUNTY.

New Rich Diggings.—*Journal*, 14th: Clifford & Co., on the 29th of July, in Corral Creek, Lower Trinity, ohtained half an ounce as the resnlt of four hours' labor with a rocker. The gold is coarse, heavy and bright. The new mines are called the Corral Diggings, and are on the trail from Cox's Bar to Hiampom, in a large hasin of which Corral Creek is the outlet.

New River.—A communication from Pony Creek informs ns that the miners are at work as usual, and generally doing well; also that John Keach and the Portuguese Co. are preparing to go into winter quarters.

Notes of Travel.—Douglas City is looking very dull, owing to the shortness of the mining season and the fact that all river mining is closed out forever in that neighhorhood—the hed of the stream being filled with tailings from the high henches. Indian Creek has held its own pretty well. I am told most of the diggings paid well this season. At Poker Bar, on Trinity River, two men are hringing water on a high hench, above Lane's Ranch, said to prospect well. From Lewiston, up the course of the river to Von Matre's, there are three or four companies wiugdamming. Better prospects and finer-looking gravel I never saw than iu the claim owued hy John Mercer & Co. There is a fine ditch privilege heiug located aud claimed hy Mr. Chandler, commencing near Von Matre's Ranch, extending down the river 10 or 15 miles, and covering any amount of low hars which will pay from three to fifteen dollars per day to the hand. I have lived in this county eleven years, have been a practical miner during that time, have been in every mining camp, and it is my opinion that within six miles in every direction of Van Matre's Ranch is the hest mining section in Trinity River. Minersville looks very dull, but the mines iu that vicinity are paying.

The Big Ditch.—In reference to this project, the *Journal* says: "Concerning the ultimate constructiou of the Stewart's Fork ditch, we have no doubts. It not ouly offers rare inducements to capitalists as a safe and profitable investment, but it is rapidly becoming a necessity to the business interests of not only Weaverville, hut the entire county."

Arizona.

Sterling.—Prescott *Miner* July 31st: Good ore continues to he raised from the shaft of this mine. The mill will soon be in ruuning order.

Colorado.

Clear Creek.—Central City *Herald*, Aug. 11th: Major Cannon hrought over two nice bricks yesterday, which he got at Stewart's works, from Whale ore. The two together weigh 508 ounces, worth $431, the product of three tons of ore. It cost $90 to mine the three tons, $37.50 to have it delivered at the mill and $187.50 for milliug, giving a total expense of $304, which leaves a profit of $127 on the lot.

Bullion for July.—Total, in currency, $168,000; for corresponding month last year, $145,000. August opens well; the coach carried away $32,000 this morning. The prospect of a revival of some old companies which own good property, but which have heeu doing nothing for years, will likely make a considerable difference in our shipments during the closing months of the present year.

Granite District.—Partridge & Morrison are working a new lode, called the "Spondulix," which yields from $400 to $1,300 per cord. Yesterday Mr. Partridge showed us a number of specimens that were nearly all gold.

Russell.—This gulch is now a paying institution. Three quartz mills are making money there. Reed is making his Delaware property pay; Bradley is doing first rate with his new mill and another mill is also doing a fair business.

Mill City, Montana District.—Works similar to Stewart's at Georgetown, are heing huilt. The ore in Col. Hawkins lode assays from $40, up into the thousands.

Consolidated Gregory.—*Register*, 12th: Mr. Nickolls took out fourteen cords of ore last week, and is confident that he will make the mine pay largely.

The Gaston lode, between the Gregory Extension and Bates, has a crevice from eighteen to twenty-four iuches wide, at a depth of thirty-five feet, aud yields five ounces of gold hullion per cord.

Baltimore Tunnel.—We saw some ore from this tunnel which yields, by assay, $389 per ton. Several good veins will he cut hy the tunnel. They have just reached the Boaz, from which the ore ahove alluded to was taken. The indications are flattering.

Federal.—Mr. Barrett showed us a fine button of silver, weighing 13½ ounces, from eleven pounds of ore from the Federal lode, on Saxon Mountain. This indicates a working yield of over $3,000 coin value per ton.

Burleigh Tunnel.—This is now in 135 ft. The Mendota lode, the first to he pierced hy it, will he reached iu 600 ft. from the entrance. Some small veins will ho cut before reaching it.

The Terrible.—This tunnel is in 100 ft. The Burleigh drills are used.

Leavenworth Mountain.—On the north side, Matt. France is working the Heaton lode. The last 15 ft. yielded over a ton of ore worth over $500 per ton, besides several tons of second class ore worth $100 per ton. The Apache is also producing rich ore. Several other lodes yield more or less ore. The whole length of the tunnel will he 4,000 ft.

The Georgetown *Miner* states that the bullion shipments from Georgetown for July, amounted to $13,905.75, coin value, of which the Brown Co. shipped $5,056; Huependen & Co., $2,295.60; and Stewart, $6,554.15. The Brown Co. and Huepeden & Co., ruu only about one-third of the month.

Idaho.

The Bedrock Mining.—*World*, August 12th: This enterprise is satisfactorily progressing. The douhle shaft is sunk to beyond 60 feet depth, and is securely timhered all the way. The hoisting apparatus and engiue for hoisting aud pumping are in operatiou.

Silver City Items.—*Wave*, 13th: The Home Resort shaft is dowu 30 feet aud yielding very fair ore, the vein ranging from 13 inches to two feet.....The Empire holds up her prospects with three feet of vein and two of good ore....The Silver Cord mill is still at work on good looking ore and will clean up in a day or two. The mine is still holding its own in appearauce. ....The Poorman, Golden Chariot and Ida Elmore are regular producers. Corduroy and Red Jacket are heing developed with all the force available in single shafts..... We have had no report this week from the Woodstock and several other locations.

Florida Mountain still keeps up in the placer line, and a ditch has heen surveyed from the head of Jordan Creek. We are told that they propose to have water on the mountain within two months.

Bixhy has heen seen on the streets several times with good gold-hearing rock in his fists.

Leviathan.—J. L. Stewart and Dan. Edwards brought over on Tuesday the result of eight tons crushing of Leviathan ore iu Black's mill iu Flint, which yielded ahout $150 per ton. The mill is still ruuning on its own tailings, and we understand doing very well.

The *Statesman* of the 10th gives an account of a stampede to the headwaters of the middle fork of Salmon River, where a basin as large and rich as that of Boise is said to exist. It is situated 130 miles northeast from Hog'em.

Golden Chariot.—*Avalanche*, 14th: This mine looks fine. The shaft is at a depth of 320 feet, 70 feet helow the third level, from which the ore is now taken. The shaft is being sunk 90 feet, 20 of which are yet to be completed. The ore is excellent.

Emerald.—Judge Watson informs us that he has struck a fine ledge of mineral in the Emerald, thirty feet north of the discovery.

Potosi.—We visited the Potosi yesterday. Some of the hest silver ore we have ever seen, is now being taken from this mine. The ledge varies in width from a foot and a half to two feet in width. Free gold is visihle.

Poorman.—Ten tons of ore per day is extracted of fair quality. The shaft is 400 feet deep. A well-defined ledge about 1¾ feet wide is visihle in the south level.

Leviathan ore worked hy Swartz & Edwards in Black's mill, Flint, yielded at the rate of about $150 per ton. The mill is still ruuning.

Placers.—The placers on and helow Florida Mountain continue to attract attention. Several new locations were made this week.

Mills.—The New York mill is running on Golden Chariot ore. The Cosmos is pounding away ou Silver Cord rock, and the Minear is ruuning on Home Resort ore. The Webfoot mill we learn will start up in a few days.

Ida Elmore.—A tunnel has been run 1,200 feet, tapping the mine at a depth of 250 feet. It is five feet in width by six ft. in hight, substantially timbered. The level in which work is now progressing was formed at a depth of 250 feet. The main shaft is down over 30 feet below this level. The ledge at this point maintains an average width of 4½ feet, and the ore will work $100 to $125 per ton. Over the main shaft is now almost completed a substantial engine house, and connected therewith a commodious ore house, capahle of receiving 200 tons of ore. The new 25-horse power engine is in its place. There are 46 hands at work in and about the mine. The mill is in fine running trim.

Montana.

Brown's Gulch.—Virginia *Republican*, Aug. 6th:—Mr. George Adkins informs us that 2,500 lhs. of the Lorraine lode yields, to common mill process, 12 ozs. and 11 dwts. of bullion. The Pacific and Eumenia lodes yield $116 20 to the ton. By ordinary process the Pacific and Eumenia will average $60 per ton; the Romeo $75; and it will cost not to exceed $25 per ton to work them.

Midas Mill.—Jackson, at Sterling, has just put in motion a small prospecting mill for the purpose of testing the ores in that vicinity. It is operated by water power, and works twenty-five pounds of quartz to a charge. Mr. Jackson is investigating the lodes of Hot Spring district with a view to putting the Midas Mill in operation early in the fall.

Green Campbell—The first application for a patent for quartz uuder the law of Congress of 1866, has just heen made for the Green Campbell lode, in Silver Star district.

Norwegian Gulch.—Want of water is the only obstacle to want of success of the miuers. The gulch is rich, the gold of excellent quality, and the settlers determined. Kiser has made every drop available in working his claim; Clark and Fletcher, at the mouth of the gulch, have constructed a ditch for miles, which yields them all the water now controllahle.

Nevada.

COPE DISTRICT.

Good Ore.—Elko *Independent*, 11th: We were showu yesterday, au assay of ore from the Rattlesnake ledge, that returned $9,820 in silver to the ton. The ledge is of good size.

Same of 13th: Uncle John Atchison says the ledges at Cope are only about 12 or 15 inches thick, although some claims turn out rich quartz. There are about 150 people there.

Mountain City.—Same of 14th: Enright reports that several uew lodes have been discovered, aud new placer diggings found both up and dowu the Owyhee. Work is being pushed ahead on the California and Argenta, with the very best results. Col. Drew will have a mill ruuning in about 60 days. Work on a ditch to hring water ou

the placers has already begun, and will be completed in about six weeks.

Good Assay.—Ore from the Mountain City ledge assayed $1,111 per ton. Messrs. Sellers, Russels, and Hafford are the owners.

HUMBOLDT.

Unionville.—Elko *Independent*, Aug. 14th: The new mill for the National mine is being rapidly put in place on Buena Vista Creek.

The silver mining is bringing to the surface unusual quantities of superior ore, most of which will be shipped below for reduction. The mill is now undergoing some changes with a view to increasing its capacity. Fall's mills are running as usual, with very satisfactory results.

Copper.—J. J. Kellogg laid on our table yesterday some very rich specimens of copper ore, from the Union lode, Battle Mountain district. The lode is 3½ ft. wide and has been traced for 200 ft. It is only five miles from the C. P. R. R., and a good natural road all the way. Besides the copper, the ore contains $38 in gold. The selected ore will work 60 per cent. in copper.

REESE RIVER.

Mineral Hill.—News from Carlin, Aug. 13th, is as follows: The accounts brought in from Mineral Hill—the name of the new mining district south of here—have created considerable excitement, and large numbers are leaving daily for that region. Rock five ft. from the surface assays $4.50 to the ton, with ledges 15 ft. wide.

Eureka District.—Austin *Reveille*, Aug. 14th: We learn from Alderman Triplett, who returned this week from the Eureka district, that the smelting works lately erected by Mr. Stetefeldt for the Eureka Mining and Smelting Co. are in successful operation. A run of 80 hours had just been made when Mr. Triplett left, during which 8,300 lbs. of ore had been smelted—or a little over 100 lbs. per hour. The assayed value of the smelted metal was between $400 and $500 per ton in silver.

The *Reveille* thinks Austin is picking up. Some of the merchants who left it for White Pine are coming back. Every tub must stand on its own bottom. Whatever may be the case with White Pine's bottom, the *Reveille* think Austin's is sound.

WHITE PINE.

Mining Review for the Week.—*News*, Aug. 14th: The past week has been very quiet, all opposition to the reduction of wages having ceased. The Miners' League is disbanded, and six of the leaders are now lying in the County Jail for lack of money to pay their fines. No further trouble is apprehended from turbulent characters among us, as it is well known that a formidable organization of the better class of citizens stands ready to put down in future all such acts of lawlessness and crime as have lately occurred here. Work has been resumed in several of our mines during the past week, and others are expected to in a few days. Some of the mines at work have also increased their force since our last review. So many workingmen left the district during the troubles growing out of the strike that there is scarcely an an idle one to be seen on our streets, and it is probable that we shall soon find it difficult to engage the number that will be wanted. An increased amount of ore has been taken out and sent to mill the past week. The shipments of bullion the past week were as follows:

August 7th	$ 6,908 84
August 9th	6,886 56
August 10th	23,408 77
August 11th	2,396 73
August 12th	14,898 19
August 13th	6,471 87
Total	$60,940 96

We have given each day's shipment, so that no discrepancy shall appear in the published reports. The above amount is about $5,000 more than the shipments of last week.

Items.—*News*, 9th.—The Eberhardt mine has started up again with about 20 men, and will increase the number soon. We understand they are taking out some very rich ore ...Fine indications in the Silver Vault tunnel....Shaft in the David's mine is now 54 ft. Vein increased to 2 ft. in width. Ore at surface assays $17 in silver; at present depth, $140....10th: Good-looking ore from La Belle mine....A piece of ore from the Northern Light, located at Babylon in the Base Range, was shown us yesterday, which showed very well in chlorides, and assayed over $200 per ton. Though from the Base Range, it contained no base metal. There is a large vein of this ore, and several men are employed in taking out ore for reduction.. .12th: Good ore from north shaft of Pogonip and Othello. Two men take out two or three tons daily of $150 ore....Pocotillo starts up to-day with a full set of hands....13th: The John Dare Co. have struck good ore in their Bulwark location, on the eastern slope of Treasure Hill....In Mahogany Cañon, the Evening Star Consolidated is taking out as rich ore as ever. Four men are taking out good rock at Gold Hill South. Rich ore coming from Mazeppa. New York claim started up again. The California is working with a small force. ....*Empire*, 15th: The Post-hole had some 265 tons of ore crushed within the last 30 days, the highest grade yielding upwards of $1,600, the second grade $194, and the lowest $124....Eberhardt has its principal force at work in its great chamber, where more rich ores are exposed than ever before. No work is now being done in the 175-foot level, where rich ore can be taken out whenever workmen are placed there.

Mills and Smelting Works.—*News*, 9th: The Big Smoky mill, at Hamilton, turned out $40,000 in the last two weeks. It is now running on some very rich ore from the mines belonging to its owners. ....12th: The Metropolitan mill at Shermantown is closed for a few days, to make some needed repairs to the boilers. The Oasis is also temporarily closed for repairs. ....Schmolz, the assayer is constructing a brick furnace at his new place....13th: The new smelting furnace in Rutherford Cañon, near Swansea, having erected a steam engine on the premises, starts up to-day. On its first trial, a week ago, by horse-power, it turned out about 1,000 lbs. of lead bullion in about three hours. Mosheimer's smelting works are in operation, also turning out a number of bars every day. We hear this furnace is to be enlarged soon. By the way, the silver obtained by smelting is never counted in our bullion shipment....*Empire*, 10th: Logan, Lucas & Co's mill at Swansea is to be known hereafter as the Vernon mill. A bar of the value of $1,084 was turned out the other day from this mill from 1,200 lbs. of ore. It was worked up to 90 per cent. of the assay....The boilers are in place and the battery blocks are being put in place at the California mill. The building is ready for the roof. It will probably be ready to commence crushing between the 1st and 10th of next month....13th: The machinery for a 20-stamp mill, belonging to Page & Burnett, is to be taken to Mount Ophir.

Outside Districts.—*Empire*, 10th: News from Pinto favorable. We have seen samples from the Sunburst, the Southern Hope and the Pocahontas, all of which are rich in silver. One specimen from the first named mine has been left with us, and it will assay well up in the thousands.... Twenty tons of ore from the Pinto mine was recently worked at the Pinto mill, and yielded $167 per ton....11th: Ore from the Reporter mine in Keno district prospects well in gold....12th: Matters in Patterson district are beginning to look up. Martin's crusher, equal to 15 stamps, will be ready to stamp up in about two weeks. ....13th: A new mining district has been organized in the Diamond Range of mountains, 30 miles south of Pinto. The mines are said to prospect well, and the ledges are large and easily traceable. Wood and water abound....14th: Judge Lindley has spent a month at Reveille. He reports prospects excellent, but no mills. The great want is capital....15th: Spring Valley district, 65 miles west of the Diamond Range, has flattering prospects. One hundred men already at work. One hundred and fifty pounds of ore from the Harry Hamilton yielded at the rate of $40 per ton. The tailings averaged over $600 per ton.

Water Works.—*Empire* 11th :—The White Pine Water Company yesterday accomplished the feat of raising water to the tunnel and through the pipes on this side of Momomoke mountain to the reservoir at the level of the city of Hamilton. A very large volume of water was introduced.

Important Mining Decision.—*News*, 9th:—His Honor, Judge Beatty, decided recently, in the replevin suit of the South Aurora *vs.* the Autumn, to recover the bullion taken by the latter from the mining ground in dispute between them, that the plaintiff was not entitled to judgment. The decision was based upon the fact that the bullion being personal property taken from the ground in dispute, under color of title and in good faith, was not subject to replevin, for the reason that in such a suit the question of title to real estate could not be considered. The defendant having obtained possession of the property sought to be replevined, in a legal manner, and under a title equally good as that of the other party, until judicially pronounced invalid, cannot be held to have unlawfully obtained possession thereof. The fact that a suit is pending in regard to the title to the mining ground from which the bullion was taken, does not affect the rights of either party to the possession of the bullion, when that possession was obtained without fraud, and in good faith under color of title.

New Mexico.

Moreno.—The *Lantern* says: The clean up on Spanish Bar for last week was a little over $300. The mines on two or three claims on Willow Creek produce $400 each, and another $880. Pollock, at the foot of Grouse Gulch, cleaned up $681, being the result of the labor of ten men for four days. The California Co. in Humbug cleaned up $411, being at the rate of about $11 per day for every man employed. A Mexican brought into town this week some fine specimens of wire gold from a lode which he had discovered about 18 miles southwest of this place.

The Albuquerque *Review* says: Ten pounds of quartz from the Langston lode, at Pinos Altos, yielded 24¾ ounces of gold.

Oregon.

Bohemia Mines.—*Oregonian*, Aug. 7th: Messrs. Ladd and Knott arrived home Sunday. They brought with them specimens from the Excelsior, and several others. The tests of the Excelsior rock show a very fair prospect. Messrs. Ladd and Knott will immediately set about procuring a quartz mill.

Lewis River Mines.—*Register*, 6th: The excitment about the mines still continues. We were informed by Mr. Marsh that Mr. Tuke had some of the gold called shot gold. He took out eight cents to the pan. Mr. Michael Wintler says he wishes to get up no excitement, but that it will average $5 per day. The miners have organized a mining district and passed mining laws. Three hundred and sixty feet is allowed to the man. Seventy-five paying claims have already been taken up, and prospectors still flock in. The miners are mostly inhabitants of Vancouver and vicinity.

Utah.

Salt Lake.—Aug. 11th: The Woodhull Company have opened their rich galena veins in Cottonwood Cañon, 30 miles southeast of here. They have shipped fifteen tons of ore to San Francisco for reduction, and fifteen tons more are ready for shipment. The Smith Company, in Bingham Cañon, thirty miles southwest of here, have sixty tons of copper ore ready for shipment to San Francisco. Twelve tons have been already shipped for Baltimore.

Improvement in Mining.—Mining among the ancients was rude and simple. Hand washing for gold and quarrying of other metal veins near the surface were the methods first practiced. The tools found in ancient mines on this continent, are merely rough hammers of stone. Pictorial representations of Egyptian mining show criminals and prisoners of war digging ore out of the ground, crushing it into small pieces, grinding it to powder in hand mills, and washing away the refuse and earth on broad inclined planes, while the smelters are purifying the metals in crucibles. Blasting by gunpowder was introduced about 1600. Before that time shafts and horizontal galleries were excavated by hand, with great labor, and ores carried to the surface on the heads or shoulders of workmen. The earliest improvement was the windlass. The use of horse and water power successfully followed, and then the steam engine which was first applied to mining by Watt, in Cornwall. The transportation of heavy ore led to the introduction of underground wooden tramways, about 1775. These underground ways very soon led to their use above ground. The wooden string pieces were next covered with a flat iron, which 50 years later, and less than 50 ago, led to the substitution of the iron horse for the man and animal power previously employed.

Repolishing Furniture.—Oiled furniture that has been scratched or marred may be restored to the original beauty simply by rubbing boiled linseed oil, used by painters, on the surface, with a wad of woolen rags. Varnished furniture, dulled may be similarly restored by the use of a varnish composed of shellac dissolved in alcohol, applied in a similar manner. Common beeswax rubbed over furniture and heated by friction of a woolen wad briskly used, is also an excellent furniture polish.

Tropical Fruits in the Southern States.—The cultivation of the date, the sugar and the cocoanut palm, is to be tried in the Southern States. These palms furnish fruit, sugar, oil and fiber; and it is confidently expected they will flourish and become profitable in those States.

California Academy of Sciences.

The California Academy of Sciences held its regular meeting on Monday evening last—Dr. J. C. Cooper in the chair.

Maurice Dore was elected a member of the society.

Some discussion took place in regard to the scientific name of the California species of poison oak, which was finally decided to be recorded as *Rhus toxicodendron*.

Dr. Cooper said, in examining a cabinet of shells from the Straits of Fuca he had found several specimens which the Society did not possess, and which he had placed in their collection.

Dr. Gibbons called the attention of the Society to the smoky condition of the atmosphere which had prevailed for several days past. A similar phenomenon was observable at about a corresponding period last year, which was attributed to the extensive fires which had prevailed in the forests of Oregon. He had learned some weeks ago that a great conflagration was raging in the timber around Puget Sound in Washington Territory, and he had anticipated the arrival of the smoky period which was now upon us. He thought the smoky season would last a month. It was not clear in his mind what influence carried the smoke from the north down the coast. It was evident the surface currents of air which usually prevailed would not do so. It probably rose far above the surface of the earth, and was brought in this direction by an upper current of air. Many people had thought that the smoke which enveloped us for some days last year was caused by volcanoes and earthquakes. He was confident such was not the case. The smoke was caused by fires in the woods.

In reply to a suggestion that the peculiar atmospherical appearance might be due to fog, the Doctor said that when the same phenomena made its appearance last year, in a manner more marked, it was accompanied with a most unmistakeable smell of smoke. He noticed quite a strong smell of smoke, a few days since, over the Bay. The next day he was in the vicinity of and beyond Mount Diablo, when he noticed the same phenomena and smell. Smoke would sometimes travel a long distance. He had known it to travel, accompanied with particles of soot, 400 miles—from Maine to Delaware. Contrary to his early belief, he had of late years attributed the peculiar phenomenon, known at the East as the Indian summer, to smoke.

Dr. Behr said it was strange—smoke from fire in other countries did not rise and spread over vast distances. In Australia extensive fires covered the grazing country, and at night the fire could be seen for miles on the hills, twisting and writhing like serpents over vast extents. The people burned the old growth in order to let the young grass grow for stock, and the fires were permitted to burn, but the smoke did not extend beyond the distance at which the flames could be seen. He said in Russia the smoke did not spread over the country, and was not felt. In Germany a smoke was seen and felt which for a long time could not be accounted for, but which was now generally conceded to have its origin in the burning turf, a bed of which extended from the sea shore to the Alps.

Dr. Gibbons said smoke and wind were incompatible. In the East the first day's wind always entirely dispelled the haze of Indian summer.

Dr. Behr remarked that the atmosphere had a great effect upon smoke. Some days it would rise straight up in the air, and other days would creep about the roofs of the houses. He thought, in considering the nature and action of smoke, the effect of the atmosphere upon it would form an important part of the study.

The Chair said eminent geologists had decided that smoke issuing from volcanoes contained no carbon whatever.

Dr. Gibbons said that smoke from volcanoes was probably part ashes, and was chiefly composed of unconsumed mineral matter.

In the course of the above discussion some allusion was made to earthquakes, Dr. Gibbons remarking that we had enjoyed an unusually long immunity from earthquakes of any magnitude. The great earthquake of last October he thought to have been a very critical one. It had given vent to the accumulated gases, and hence we had since felt no shakes of consequence, but he should not be surprised, *after it was over*, if we had a small shake one of these days. He did not wish to alarm the members of the Society, but he thought we might look for an earthquake almost any day.

At the close of the discussion on the main subject the Academy adjourned.

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W. B. EWER.....Senior Editor.

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Notices to Correspondents.

Taxidermist.—Naturalists, unless in exceptional cases, do not preserve animals, birds, etc., further than by impregnating the skins and plumage desired to be maintained in their original appearance with some powerful antiseptic, which is ohnoxious both to insects and animalculæ. Arseniate of potash is consequently used for this purpose. In this condition they are arranged in boxes or drawers, instead of being stuffed and placed in cases. The boxes and drawers are respectively devoted to a family, genus, or section. Thus preserved and thus arranged, as perfect and as useful a collection as a youthful student will need or probably desire, will occupy a comparatively small space. Freedom from exposure to light and dust are essential to the preservation of colors; and, consequently, closed drawers are much better calculated for maintaining the appearance of specimens—especially brilliant ones—than if placed in glass cases.

J. M., Mariposa.—Dr. Zirkel submitted all the varieties of quartz entering into the composition of granites, porphyries, and trachytes, to microscopic examination, and according to his statement, found all to possess innumerable cavities containing liquids; some of which cavities were so small that even under a magnifying power of 2,000, they appeared only as minute points. The quartz and associated feldspar included particles of matter which had taken the shape of vitreous or lithoid cavities or pores. In nearly all the varieties of granite, the quartz is described as including myriads of crystals of vitreous feldspar, irregularly spread in every direction.

J. W. B., Grass Valley.—From the observations made on *a* Centauri at the Cape of Good Hope, former calculations were confirmed respecting its parallax, which was found to exceed nine-tenths of a second; hence its distance from the earth must amount to at least twenty billions of miles. So far as human agency has been able to ascertain up to the present time, the star in question is the nearest one to us of the stellar system.

A Communication from "J. T.," of Gibsonville, with regard to the source of the ancient rivers of California, and the occurrence of coal on the Middle Fork of Feather River, will appear next week.

New Blow-pipe Apparatus.—We would call attention to a communication in another column descriptive of a new blow-pipe apparatus, which may prove of great advantage to prospectors, as well as to all others who have much assaying to do. A patent for this invention has just been secured through the Mining and Scientific Press Patent Agency.

What is the "Practical Use" of the Spectroscope?

First, what *is* the spectroscope? Briefly, it consists of a glass prism and a small telescope. How is it used? A few words will explain.

If we admit a ray of light into a dark room, through a narrow slit in the window shutter, it appears on the opposite wall as a white spot, shaped like the slit. If we hold in its track a glass prism, it appears on the wall as a strip of light made up of various colors arranged in a certain order; the differently colored rays, of which the ray of white light is made up, being differently bent by the prism. This strip, or band, is called the spectrum. The order in which these colors are arranged is invariable. Now different substances when vaporized and made luminous, give different colors; each its own kind of light. If we should admit through the slit, instead of sunlight, the light given off from burning sodium, for instance, we should see nothing on the opposite wall but a bright yellow line, exactly in the place which the yellow occupied in the spectrum produced by the sunlight,—that is, in the *continuous*, or solar, spectrum. Common salt, which is chloride of sodium, will answer for this experiment. A platinum wire, dipped in a solution of it, and held in the flame of an alcohol lamp, which is itself colorless, will give the yellow line which constitutes the spectrum of sodium. The same is true of other simple substances; each gives, under proper conditions, its own spectrum. Hence we have an infallible means of detecting the presence, in any luminous vapor, of any substance whose spectrum has been already determined. The very smallest quantity of the substance is sufficient.

Instead of admitting the ray through a chink in the window shutter of a room, we may, of course, allow it to reach the eye directly through a telescope. This is what we do, when we use the *spectroscope*. The rays from the incandescent source of light, whatever it may be, pass through a tube and strike a prism, on the opposite side of which, at the proper angle, they enter a small telescope to which the eye is applied in the usual manner. The tube aforesaid has, at its end furthest from the prism, a slit through which the rays are admitted; and at its other end, a lens which serves to parallelize them. In front of this slit is placed the substance to be examined. If it is not vaporizable in the flame of a Bunsen's burner, or in the oxyhydrogen flame, the intense heat of the electric discharge is employed for the purpose; the substance being made to form terminal points, between which the spark leaps when the observer completes the circuit by bringing two wires in contact with each other. At that instant an infinitesimal portion of the substance is volatilized and made luminous; and the observer notes the lines of its spectrum and their exact position. This is done by means of a transparent glass scale showing the position of all the lines upon the solar spectrum, which scale is so placed at the end of another tube belonging to the instrument, that its image falls upon the telescope side of the prism, and is thrown by it into the eye at a point just above the spectrum under examination,—which is thus easily compared with it. Here then we have the spectroscope in its simplest form. Various modifications of this form are in use. Some are made with several prisms, so arranged with reference to each other that the rays traverse the whole; others have a small prism in front of one-half the slit, by means of which the light from another substance may be thrown into the tube and examined at the same time with the first, for the sake of accurate comparison. But the essentials of the instrument, as we intimated at the outset, are a prism and a telescope.

Now for its "practical" use. As we have said, the minutest conceivable quantity of a substance unerringly betrays itself to this exquisitely delicate test. With this instrument we can detect the two hundred millionth of a grain of salt floating in the air; we can see that substance a million miles off. With this instrument we can determine the constitution of the sun; with it we can analyze the stars. The presence of iron, copper, nickel, cobalt, magnesium, hydrogen, sodium, calcium, and barium,—in the luminous envelope of the sun,—has by its aid been fully ascertained. Who knows what light the knowledge of these facts, and of those yet to be discovered by the same means, will shed upon astronomical science? But this is not all. The instrument has claims to notice which will appear stronger than this, to many whose notions of "practical" value are based immediately upon the pocket. With this instrument the iron-master can tell the precise moment when the particular kind of steel which he wishes to produce has taken up the desired proportion of carbon. The flame itself tells the story far more perfectly than any rule of thumb at the critical moment, or even than subsequent analysis of the resulting product.

By this means, too, the dyer may ascertain the purity of his materials, more accurately than by any elaborate and time-taking analyses; and that perhaps at a moment when thousands of dollars may be depending on exactness,—when prepared vats of expensive dyestuff may be ruined by the addition of an impure article. By means of this instrument, too, the murderer may be brought to justice; and the damning blood-spot which has been fading for twenty years, be made to yield up its secret. Spectral analysis has infallibly distinguished between stains of this character and others so closely resembling them that it would be impossible to decide the question by any other means. With this instrument new metals may be discovered: with it,—says Prof. Barker,—"the green line of thallium first saw the light." Indium was discovered by the same means. Indeed the field for research which this little instrument has opened to the scientist is immense; and its "practical" value incalculable. The tenth year since its discovery is not yet completed. Who can guess its future?

Death of Louis Prevost.

A dispatch from San José on the 16th announced the death of Louis Prevost. It is an especially notable death. The State suffers a loss in it. Mr. Prevost deserved well of California. He had devoted himself to the advancement of the silk culture; an industry which is probably destined to be one of the most important on this coast. For the last thirteen years, Mr. P. has been active in urging the peculiar fitness of California for the business; and for the last three or four has himself been entirely occupied in it. He has kept up an extensive correspondence with European silk-growers and silk manufacturers; and was always ready to communicate information on the subject. Having become convinced that Los Angeles County offered especial advantages for this culture, he went thither early in the present season to establish an extensive cocooncry; and undoubtedly owes his death to the exhaustion consequent upon his unceasing labors during the summer. He felt a laudable pride in being known as the "Pioneer Silk Culturist"; and his fame as such will be lasting. He was sixty-three years of age.

Contributions to Our Cabinet.—A correspondent, "T. F.," sends us some samples of agate, such as are often picked up along the line of the Pacific Railroad. They may be found in great numbers at and near the summit of the South Pass. They are of the ordinary variety, and need no special description.

A New Mineral—Durangite.

Some months since Mr. Jos. Bennett left at this office, for examination, a mineral which he had obtained from the vicinity of the stream-tin deposit of Durango, Mexico. We made a brief mention of its reception, and handed the specimen to Mr. Henry G. Hanks, of the firm of Falkenau & Hanks, chemists, of this city, for further examination. Mr. H. finding the mineral quite new and interesting in character, forwarded a portion of the same to Prof. Geo. J. Brush, of the Sheffield Scientific School, of Yale College, for more particular examination and analysis. Mr. H. has just received a letter from the Professor, accompanied by a proof-sheet impression of an article which he has prepared for the September number of the *American Journal of Science*, from which it appears that the Durango specimen is a new and most interesting mineral, which the Professor has named—after the locality where it was found—Durangite.

The mineral is of a bright orange red, the crystals having a rhombic aspect; streak, cream yellow; luster, vitreous; cleavage, distinct in two directions; crystallization, monoclinic; hardness, 5; specific gravity, 3.95—4.03. The small quantity of mineral which could be used for the test, did not allow a full and complete quantitative determination. Direct duplicate estimations, however, were obtained of every constituent except fluorine. This last element was found to exist in such considerable quantity, that the fluohydric acid evolved, in attacking the mineral by sulphuric acid, etched the glass with great readiness and distinctness. The following results were obtained by analysis. No. 1 in the wet way, by sulphuric acid:

Arsenic acid	55.10;	Quantity of oxygen		19.16
Alumina	20.60;	"	"	9.63
Ferric oxide	4.78;	"	"	1.44
Manganous oxide	1.30;	"	"	0.30
Soda	11.66;	"	"	3.01
Lithia	0.81;	"	"	0.43
Fluorine	undetermined.			
	94.33			

Analysis No. 2, made in the dry way, by fusion with carbonate of soda; dissolved in water, acidulated with chlorhydric acid, gave: Arsenic acid, 53.22; alumina, 20.09; ferric oxide, 5.06; manganous oxide, 1.28. The low amount of arsenic acid by this determination, it was thought, might be due to the fact that the soda fusion was made over a gas blast-lamp, with the possibility that a portion of arsenic acid might have been reduced to arsenious acid, and volatilized; or possibly to other accidental causes. The small quantity of mineral at hand would not allow of a repetition of this analysis.

An analysis, No. 3, was made, qualitative-quantitative, in which only the alkalies were estimated. The result of this was: Soda, 11.86; lithia, 0.70—agreeing very closely with No. 1. The alkalies examined with the spectroscope showed only the lines of sodium and lithium.

The composition and oxygen ratio (nearly 1 : 3 : 5), says the Professor, "suggest an *analogy* between the new mineral and amblygonite, a fluo-phosphate of alumina, lithia and soda;" but he thinks the results given are sufficient to demonstrate it to be a new mineral, and, as he thinks, the only observed native fluo-arseniate.

The Professor, in his private note, says: "It is one of the most interesting minerals, chemically speaking, that I have ever investigated; and I have enjoyed the study of it exceedingly."

Mr. Hanks has sent, through the Mexican Consul, for a considerable quantity of the mineral, which he hopes soon to receive, and a portion of which he will forward to Professor B. for further examination.

The study of the crystallography of the mineral has been taken up by Prof. John Blake, who will give a preliminary note on his observations in the September number of the *Journal of Science*, which will soon be received in this city, and to which we would refer the reader for the entire article from which we have taken the liberty to collate the above.

The Stevens' Flux.

Quite a little excitement was created in the Eastern States, some two years ago, with regard to a new flux which it was proposed to introduce as an agent in the smelting of minerals and for other metallurgical purposes. Such extravagant claims were set up for it, however, by some of its more injudicious friends, that they no doubt operated to its injury for the time. But as no question was raised as to its excellency as a flux, those who were well posted in metallurgical operations have kept it constantly in view, and have become much interested in the various experiments which have been made with it from time to time, particularly as a substitute for borax in welding iron and steel, and for its use as a flux in foundry cupolas.

Within a few days a small quantity of the material has been received in this city, consigned to Mr. S. W. Bugbey, 406 Montgomery street. Small lots of the same have been distributed among the various foundries, which have been experimenting with it during the past week, and so far as we have learned, with most satisfactory results. It is claimed, and apparently with just reason, that by using a few pounds of this flux in the cupola, the iron is melted easier, flows more rapidly, and leaves the furnace cleaner. It appears to operate as a glazing for the ladles, causing the iron to run off more freely. Its action also appears to cause the impurities to rise more freely from the molten mass, thereby securing a cleaner and more perfect casting. It is also said to cause the iron to retain its "life" longer—to continue longer in a fluid state. We have seen some very strong testimonials of its value, for the purposes mentioned, from the proprietors of the Golden State Foundry. This flux is prepared with a greater or less degree of care, upon which depends its price—the cheaper quality being used as above, and the finer as a substitute for borax for welding iron and steel. It is much cheaper than borax, and said to be quite as good for welding. It is made from the residuo of kryolite, after that mineral has been employed in the manufacture of soda.

The Sierra Iron Company.—This is the first systematic attempt to work an iron mine in California. The company intend to work iron and coal mines, acquire water privileges, timber lands and real estate, and to manufacture iron. It will operate in Gold and Mohawk Valleys in Sierra and Plumas counties. The iron deposits are reported by F. E. Brown, C. E., who was employed by the company to examine them, as valuable, accessible, and easily worked. Baron Richthofen, who explored these iron fields in 1865, says they can boast of the best quality of iron ore known to exist.

Death of O. P. Truesdell.—The funeral of Orrin P. Truesdell takes place to-day, at Oakland. Mr. Truesdell was late proprietor of the Oakland *Transcript*. He resided many years in this city, and held offices of responsibility in the Typographical Association. He was a thorough master of the printer's art; and was at one time connected in the job printing business with the proprietors of this journal.

Passenger Traffic.—The arrivals at San Francisco by sea for July, 1869, were 3,013, exceeding those of July, 1867, by 289. It is thought, however, that the departures by the overland railroad were something in excess of the arrivals; which would probably reduce the total increase of emigrants for the month to about the figure of July last year.

Fighting Locusts.—The Pacha of Cyprus has recently conducted a campaign against the locusts, which have sorely infested that island. Nearly three thousand men were employed thirty days. The insects were caught in nets, and destroyed by burial in the earth.

Mechanics' Institute Exhibition.

The approaching exhibition of the Mechanics' Institute is beginning to engross much attention. Space in the pavilion is fast being taken up—fully three-quarters has already been taken. Applications for room are coming in from most unexpected sources. Already articles for exhibition have been received from New York, Chicago, Salt Lake, New Orleans, and the Sandwich Islands. Exhibits are expected from South America, Mexico, China and Japan. It is time that all our local exhibitors were making preparations for their display; some are already doing so. It is desired to make the coming exhibition more strictly than any preceding one, a display of the actual industries of the various localities on the Pacific Coast, its islands and opposite shores, as well as our great interior, west of the Rocky Mountains.

Notwithstanding the dullness among the foundries and machine shops, it is confidently expected that there will be a greater display of steam engines, and all kinds of heavy machinery, than has ever yet been witnessed in this city. The mineral display is also expected to form quite a feature. The Art Gallery is fast filling up with the rarest works of our home artists. An important change will be made in this portion of the exhibition the present season. The Art Gallery, as occupied last year, was a single room 204 feet long by 30 wide. At the coming exhibition it will be divided into three rooms—one, on the south end, 80x30, the other two being 62x30 each.

The larger room will be occupied exclusively by oil paintings, and will be elegantly fitted up, carpeted etc. The middle room will be devoted to statuary and marble work; while the north room will be devoted exclusively to photographic displays. Parties intending to exhibit should bear in mind that all applications for room must be made on or before the 28th instant. The managers are especially desirous that all articles should be presented at as early a day as possible. Exhibitors will do well to remember the confusion and loss of time attending a delay in getting their exhibits ready and in place, beyond the day fixed for opening. It should be recollected that a vast amount of labor must be expended in arranging the great number of articles that will be presented for filling up so large an edifice. The crowding of an undue portion of this work into an unnecessarily small number of "last days," is attended with great inconvenience to both the managers and exhibitors. It is to be hoped that a manifest improvement in this particular may be seen over what has heretofore been noticed. A distinctive feature in the coming exhibition will be the setting apart of the galleries for booths and bazaars. Everything indicates that the coming exhibition will surpass all former efforts of a like character on the Pacific Coast.

Mr. Roebling—His Will—His Successor.—The late John A. Roebling, the successful engineer, whose last great work, the suspension bridge over the East River, yet remains to be completed, left a million and a half of property. In his will, just opened, he bequeaths $100,000 to each of his children, and divers sums to charitable associations. Mr. Washington A. Roebling, his son, has been appointed his successor as engineer of the East River Bridge.

Rail-car Work in Massachusetts.—At the Boston and Albany Railroad shops, workmen are engaged in making solid iron trucks, which are substituted for the old wooden ones. A year's trial has proved the vast superiority of the iron work. The frames of these trucks are made of solid iron three by one and a quarter inches. About 700 have already been finished, at a cost of $479 per set.

Vallejo.—The seventh ship is now loading with grain at Vallejo. The enterprise, having for its object the making of that place a point of grain shipment for the region between there and Marysville, if not for all the country to the north of the last named place, has proven a complete success. From present appearances it is probable that Vallejo will handle perhaps one-quarter of the wheat export of California. She will do even more than that, unless some steps are speedily taken to reduce the expenses of shipping from this port. The loss of business, even the present season, will be sensibly felt by the shippers, wharf owners, teamsters, and in fact all others in this city. This transfer of business *may* be increased by the addition thereto of the grain yield of Tulare and San Joaquin, which will not pass the port of Vallejo at an unnecessary cost to buyers and producers. Whatever tends to reduce the cost of handling our grain crops is a positive benefit to the State at large, however it may affect special localities.

A Delegation for the Fair.—Mr. Herrick, who recently went East in the interest of the Mechanics' Institute Exhibition, appears to be meeting with most excellent success, in calling the attention of our Western friends to the forthcoming Exhibition. Besides the interest already announced as being taken in Chicago, we learn from Mr. Hallidie, the President of the Institute, that the Elgin Watch Company, of Illinois, will send out a fine exhibit of their watches, together with a portion of the machinery, which will be kept in operation during the Fair. A company of some sixty or seventy ladies and gentlemen from Chicago, St. Louis and Cincinnati, has been made up to visit California and her Industrial Exhibition. They will accompany Mr. Herrick on his return. Three Pullman cars have been engaged for the accommodation of the party.

Atmospheric Phenomena.—The citizens of California have been treated during the past few days to some very singular atmospheric phenomena. The Academy of Sciences, at their meeting on Monday evening, as reported in another column, alluded to a peculiar condition of the atmosphere, generally, throughout this portion of the State, which doubtless has more or less influence in producing the special and more local phenomena which were witnessed on Tuesday and Wednesday evenings following. The crimson light was so bright in Sacramento as to cause an alarm of fire. The light was seen mostly in the northwest, and much resembled an auroral display, as it appears when seen through a very thin mist. The light was of a warmer hue than the aurora, and unlike that, perfectly steady and continuous in its glow, until it gradually faded out. It was no doubt due to a reflection of the rays of the sun below the horizon from or through some cloud at a high elevation.

A Puzzle for the Scientists.—It is said that recent researches among the fauna of the Northumberland coal measures in England have brought to light the remains of many fishes and a few reptiles, and the jaw of an animal belonging to the highest vertebrate class. The jaw has been seen by many men skilled in comparative anatomy, and they unanimously agree that the form is unmistakably mammalian. That "mammalian" must have been "born before his time," or the scientists have placed him quite out of his proper position in geological succession.

A Chispa such as you *Don't* Read of. A Downieville telegram dated 19th, is as follows: "The Monumental Quartz Company, at the Sierra Buttes, took out over $40,000 yesterday in once piece of gold, nearly pure, weighing one hundred and six pounds. It is a new claim, just being opened.

Work at the Foundries.

In continuing our notes from last week, we come to the

Fulton Foundry,

Which is working full handed and receiving an average share of business. The machinery for a new saw mill, now being erected in Mendocino County, by Messrs. Hayward & Harmon, is just being finished at this foundry. A quartz mill engine is also ready for shipment to White Pine, to be put up on a mine owned by some San Francisco capitalists. This engine has a 14-inch cylinder with 24-inch stroke. Two engines have also just been completed for Bay View, one 12 by 24, the other 8 by 16. An order for 200 hydrants, for the city, is also nearly completed—this large number being needed for the numerous street extensions which have been made the past season. We also noticed a large amount of general job and repair work in every stage of progress.

The Vulcan Foundry

Is now giving employment to a great number of men. This establishment has just turned out a large lot of superior machinery for the new California Sugar Refinery, located on Brannan Street, near Mission Creek. This machinery will be more fully alluded to next week. They are manufacturing large numbers of the new Hepburn pan at this foundry; also hydraulic power for the Shot Tower, and car axles and wheels. A huge iron cylinder, 80 feet long and five feet diameter, has also recently been built at this foundry for the Wood Preserving Company on King street. A tank 24 feet long by 12 wide and 12 deep, has also been constructed for the same company. The Mint roll gauge machine—the only one of the kind on the Pacific Coast—belonging to the San Francisco Mint, is kept in order at these works.

The Pacific

Has just received an order for a 10-stamp mill from Colorado. We believe this is the first order for mining machinery which has been sent to California from that Territory. The fact of the transmission of this order, and the recent reception in this city, of several letters from mining men in Colorado, show that the superiority of California machinery and California processes are beginning to be appreciated and sought after in Colorado.

This foundry has also just turned out a set of amalgamating machinery for White Pine, which is to be put up in connection with stamps, etc., which have been sent over from an old mill in Grass Valley. They have a large number of hands employed upon the iron work for Friedlander's building, now in process of erection, at the corner of California and Sansome streets. This structure calls for the largest amount of iron which has gone into any building which has yet been put up on the Pacific Coast—300 tons. In addition to the above, this foundry is doing its usual amount of repairing refitting, etc. The foundry department here is quite full of work; but, as is the case with all the other establishments of the kind, at the present time business in the machine is dull.

The Risdon Iron Works Co.

Have just completed the fourth propeller, which they have turned out since the company was organized, and have the fifth now in hand. The one just completed made her trial trip on Monday, and gave the fullest satisfaction to all parties concerned. The machinery which they now have in hand, is for a ferry boat, which is being built by the City Front Company; it will be 150 feet in length, with a powerful engine. A fair amount of jobbing is also being done at these works.

The Golden State

Is manufacturing a large lot of patent tanks for the quicksilver works at Knoxville, Lake County. They are also engaged, as usual, in general jobbing, and doing a fair share of other machine and foundry work.

Two-foot Gauge.—The Festiniog is a funny little two-feet gauge railway in Wales. It has been working five years. The traffic last year amounted to 130,000 tons and 145,000 passengers. Mr. Fairlie builds engines which have enabled the train loads to be doubled without much increasing the cost. The line for eleven miles has continuous ascent of sixty-six feet to the mile, with frequent curves, some of which are as small as one hundred feet radius. Mr. Fairlie's engine, the "Little Wonder," weighing 19½ tons, when fully equipped with fuel and water for the road, hauls after it 140 tons at a speed of fifteen miles an hour for the whole eleven miles. The engine has eight wheels, in two groups of four each, each group being acted on by a pair of cylinders eight and one-fourth inches diameter. The wheels of each group are two feet four inches in diameter, coupled together. The extreme wheel base is eighteen feet; consequently the engine runs with remarkable smoothness. At the same time the wheel base of each bogie being but five feet, the engine passes round curves of fifty feet with the utmost safety at twenty miles an hour.—*New York Stockholder.*

Acetate of Lead in Wine.—It is said that leaden shot are sometimes placed in the bottles when the wine to be put in them is a little "pricked"; in order that the resulting acetate (or sugar) of lead may correct the acidity. The *Druggists' Circular* has the following recipe for the detection of this poisonous adulteration: "Take of protosulphuret of calcium (made by fusing together in a crucible equal parts of quicklime and resublimed sulphur) and tartaric acid, of each two drachms; mix and pulverize finely; place them in a bottle with a pint of water, shake well, and let stand until the residue has fully settled, then filter or decant, and add to the clear solution one and a half ounces of tartaric acid. When this test is applied to wines containing even the least quantity of a salt of lead in solution, a black precipitate of lead will be thrown down, which is readily detected by the most inexperienced eye."

A Successful Career.—In the early rush to California, a poor boy named Charles Crocker, crossed the Missouri with an ox-team at Omaha, on his toilsome overland journey to the new gold regions. Nineteen years afterward—to a day—he arrived at Omaha on his return visit to his Eastern home. He came accompanied by his family, in his own special car, for he is now Superintendent of the Central Pacific Railroad, and every mile of it has been built under his supervision. He may well feel an honorable pride in the great work with which he has been so closely identified. His party were four days from Sacramento to Omaha; and on arriving there delighted the citizens with blooming flowers, and feasted them upon berries, oranges and luscious cherries from California, brought upon Alaska ice, 1,800 miles, through the green valley of the Pacific slope, and through the lingering snow drifts of the Rocky Mountains. It seems like a story from the Arabian Nights.—*Eastern Exchange.*

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(Successor to G. W. Bell.)
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J. A. MARS, Assayer.
Ores carefully Assayed. Gold and Silver Ores worked
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CALIFORNIA
BUSINESS UNIVERSITY
204 Montgomery Street.
Full particulars regarding our Practical Course of Studie may be had by calling at the University, or by addressing
17v17-qy12p E. P. HEALD, San Francisco.

REMOVED.
The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. **118, 120** and **122** FRONT STREET, one door from southeast corner of California street.
July 11, 1869. **ELAM & HOWES.**
4v19-3m

Mining Secretary.
THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.
Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.
J. M. BUFFINGTON,
Room 37, New Merchants' Exchange, California street, San Francisco 17v15 tf

Business Cards.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
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CARD PICTURES,
ONE DOLLAR PER DOZEN.
And Photographs, Ambrotypes and Sun Pearls, by first class artists, at the lowest rates,
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NATHANIEL GRAY. H. M. GRAY.
N. GRAY & CO.,
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Interest paid on Deposits. Money Loaned on Real Estate.
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BUCKELEW & CO.,
Importers and Jobbers of
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Below Montgomery street. 17v18-3m

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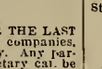
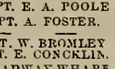
C. H. WAKELEE & CO.,
601 California street, S. W. Corner Kearny street, buy and sell Farms and City Real Estate. Parties wishing to invest will find it to their interest to call on the . 13v18-3m

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's
Claims and Mill,
Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 300 feet. A force of thirteen men only are required to keep both mill and mine running regularly.
On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which fact goes to prove that a heavy deposit of ore was once contained in the croppings of these shutes, which, by all former and present theories of deep mine workings, came from below, indicating that when sunk upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.
This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.
The last level, 150 feet from the surface rock, averaged $7 per ton on which was a profit of from $1 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.
Now I propose to sell two thirds of this valuable property for $16,000, cash; and any party who desires to purchase a property of this kind—which theory has proven that requires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.
For any further particulars, direct by letter to Wm Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.
22v18tfqr WM BOSWORTH.

California Steam Navigation

COMPANY.

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" CHRYSOPOLIS.....CAPT. A. FOSTER.
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Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.
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B. M. HARTSHORNE,
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GALVANIZING.
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☞The best price given for the most rebellious or refractory ores. Ores and minerals assayed and analyzed.
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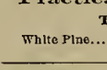
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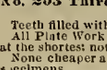
HAS REMOVED FROM MONTGOMERY to **331** Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
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22v17-3m

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2v15-1qy

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To Quartz Mining Companies.
To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR No. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—
One Steam Engine, 60 horse power, made by Burden, Brooklyn, New York.
Two large Rollers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift-Pump, 6 inches, of superior make and finish.
280 feet of 5 inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.
The Company having ceased operations intend selling off their effects as speedily as possible.
For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco 21v15-1m

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PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
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For sale—Mahogany, Spanish Cedar, and other Woods.
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Stores and Offices fitted up with neatness and dispatch.
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J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, **608** Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

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JOHNSON & BEST,
Manufacturers of all kinds of
Desks and Office Furniture,
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Warerooms, 413 Pine street, Russ Block,
A large variety of Desks always on hand; all kinds of Office Furniture and Cabinet Work made to order.
18v17qr

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SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
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Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

Pacific Mail Steamship Co's
STEAMSHIPS FOR
NEW YORK, JAPAN AND CHINA.
LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at **11** o'clock A. M. of the following dates, for PANAMA, connecting via Panama Railroad, with one of the Company's splendid steamers from ASPINWALL for NEW YORK.
On the **10th, 17th** and **30th** of each month that has **30** days.
On the **10th, 18th** and **30th** of each month that has **31** days.
When the 10th, 18th and 30th fall on Sunday, they will leave on Saturday preceding; when the 17th falls on Sunday, they will leave on the Monday following.
Steamer leaving San Francisco on the 10th touches at Manzanillo. All touch at Acapulco.
Departure of the 17th or 18th is expected to connect with the French Trans-Atlantic Co.'s steamer for St. Nazaire, and English steamer for South America. Through tickets can be obtained.
The following Steamships will be dispatched on dates as given below:
August 9th—SACRAMENTO.....Capt. W. H. Hudson, Connecting with ALASKA, Capt. Gray.
August 18th—GOLDEN CITY.....Capt. Wm. F. Lapidge, Connecting with HENRY CHAUNCEY, Capt. Connor.
August 30th—MONTANA..... Capt E. S. Farnsworth Connecting with ARIZONA, Capt. Maury.
Passengers berthed through. Baggage checked through. One hundred pounds allowed each adult.
An experienced Surgeon on board. Medicine and attendance free.
These steamers will positively sail at 11 o'clock. Passengers are requested to have their baggage on board before 10 o'clock.
Through Tickets to Liverpool by the "Inman" and "National" Steamship Lines, can be obtained at the office of the P. M. S. S. Co., San Francisco, where may also be obtained orders for passage from Liverpool or Southampton to San Francisco, either via New York or St. Thomas—if desired an amount of £10 to £20 will be advanced with the above orders. Holders of orders will be required to identify themselves to the Agents in England.
For Merchandise and Freight to New York and Way Ports, Company's Form of Bill Lading only used.
No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.
The Steamship JAPAN, Captain J. H. Freeman, will be dispatched for YOKOHAMA and HONGKONG on SATURDAY, September 4th, 1869, at noon connecting at YOKOHAMA with the steamer NEW YORK for SHANGHAI. Shippers of freight to China or Japan are requested to mark on each package its destination.
For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorf streets.
OLIVER ELDRIDGE, Agent.

Register your Letters containing money addressed to us, or we can not be responsible. Remittances by Express must be in packages, prepaid. When practicable, it is best to remit by draft, or order, on some San Francisco bank or firm.

MEUSSDORFFER,

HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL.

635 and 637 Commercial street.....San Francisco,
125 J street.....Sacramento,
Corner of D and Second streets.....Marysville,
74 Front street.....Portland, Oregon.

Our wholesale House, 628 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 23v16-3m

Blake's Patent.

THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's

Patent Steam PUMP

It is simple, compact and powerful, needs no expert to run it, and will start at any point. Is warranted to run under all circumstances. Send for a circular. W. O. M. BERRY & CO., 104 California St., San Francisco, Cal.

Office of California Powder Works,

San Francisco, July 15, 1869.

NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

JOHN P. LOUSE, Secretary.
5v19-3m 314 California street

Pump Leather.

The attention of MINING COMPANIES, and others requiring a superior article for Hydraulic purposes, is invited to the heavy Oaked Tanned Pump Leather, manufactured and prepared expressly by the undersigned.

TRADE SANTA CRUZ TANNERY E. JONES & Co MARK.

Constantly on hand and for sale by
GRAY, JONES & CO.,
Depot of the Santa Cruz Tannery,
418 Battery St., San Francisco.
25v17-1y

THE GIANT

POWDER COMPANY

Is now prepared to fill all orders for

GIANT POWDER,

Put up in Boxes, either in Bulk or in Cartridges.

General Agents,

BANDMANN, NIELSEN & CO.,
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WINDMILL

For Sale Cheap!

Entirely New and of Modern and Approved Style.

For particulars apply to or address this office.

FAIRBANK'S PATENT

U. S. STANDARD

COUNTER AND

PLATFORM SCALES!

Also, large Scales for weighing loaded wagons of Ore, Hay, etc., from 6,000 to 40,000 pounds capacity. Manufacturer's Branch House,

FAIRBANKS & HUTCHINSON,
120 California street, San Francisco.
Agents for Baldwin's Improved Money Drawers.
☞Send for a Catalogue. 18v18eow6m

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— FOR —

Mining and Prospecting Companies

Elegantly printed, with care and dispatch, at the office of the Mining and Scientific Press.

Orders from the interior faithfully attended to.

Ayer's

Hair Vigor,

For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

HAIR DRESSING,

nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.

Prepared by Dr. J. C. Ayer & Co.,

PRACTICAL AND ANALYTICAL CHEMISTS,

LOWELL, MASS.

PRICE $1.00.

Sold by all druggists and dealers in medicine every where. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18eow4m

Wonderful Invention!—To Housekeepers!

NEW METHOD OF

WASHING CLOTHES

WITHOUT LABOR.

JOHN REIST'S Celebrated Patent Automatic

CLOTHES WASHER AND BOILER.

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S. Patent Office, November 6, 1868. See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco,
Dealer in Stoves and Tinware.
25v1-3m 67 and 69 Fourth st., bet. Mission and Jessie sts.

International Hotel,

JACKSON STREET,

BETWEEN MONTGOMERY AND KEARNY STS.,

SAN FRANCISCO, CAL.

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from $1 50 to $2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

☞Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents.
21v12 F. E. WEYGANT, Proprietor.

Job Printing.

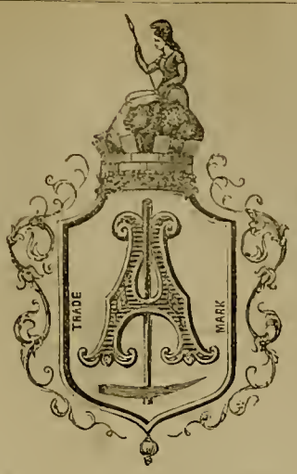
We employ the best workmen in this department, and promise our customers—(many of whom have patronized the office for over eight years)—the best of work at very fair and uniform rates.

We are constantly adding new presses, type, and other material to our stock, making our facilities good for doing a wide range of work for merchants, mechanics, inventors, manufacturers, and tradesmen of all classes.

To ENGRAVING AND ELECTROTYPING, for illustrating books and circulars, we pay particular attention, guaranteeing our customers satisfaction in this line difficult to be secured elsewhere.

Printing in colors, bronze, plain and ornamental style promptly done. Especial care given to working engravings

TRADE MARK.



New Almaden Vichy Water,

(CALIFORNIA VICHY WATER,)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the velinous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever:* Dyspepsia in all its s ages; Loss of Appetite; Bad Digestion; Flatulency; Co stani and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

OCCIDENTAL

Insurance Company,

OF SAN FRANCISCO.

Cash Capital, - - - - - - - $300,000

GOLD COIN.

Office S. W. corner of Montgomery and California streets.

Fire and Marine Insurance.

All Losses paid in U. S. Gold Coin.

CHR. CHRISTIANSEN, President
B ROTHSCHILD, Secretary 20v17-3m

That will resist the extremes of heat and cold without liquefying or hardening.

It is therefore peculiarly adapted to the varied climate of this coast, especially localities where THE WEATHER BECOMES EXCESSIVELY HOT, causing oil and all other kinds of grease to run from the axle, reaching the proper position. It remains soft until exhausted, leaving no deposit of GUM, TAR OR PITCH. Its superior lubricating properties, durability and cheapness have been tried and approved by the CENTRAL PACIFIC AND OTHER RAILROADS, STAGE PROPRIETORS, STABLE KEEPERS, TEAMSTERS, CONTRACTORS, MILLMEN, FARMERS, and many others who prefer to

USE NONE BUT THE BEST.

It being prepared by a peculiar CHEMICAL COMBINATION OF OIL, previously freed from gum or other deleterious substances, it must be obvious that by its use friction will be reduced to the lowest point. We feel assured that all desiring A NO. 1 LUBRICATOR will give this the preference over any other Grease IN THE MARKET.

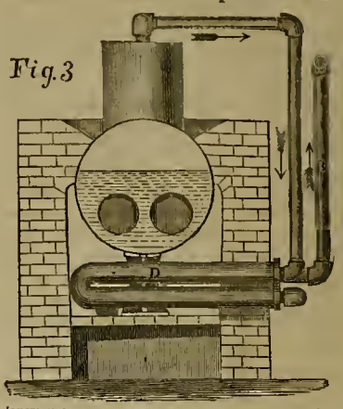
Sold by the Trade generally, and at the Factory, 100 Commercial street, San Francisco.
24v18-3m PETTIT & CO.

Important to every one using Steam for any purpose.

CARVALHO'S

Patent Steam Superheater

Fig. 3



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1869.
"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)
"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.
"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.
"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper"

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.
"Superheater saves not less than 20 per cent. fuel; no priming!"

CRUCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.
"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y DYEING & PRINTING ESTAB., Oct 4, 1867.
"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.
"Superheaters give entire satisfaction, and we superheat to 55 deg—an increase of 20 deg."

CAREW MANUF. Co., So. Hadley Falls, Mass., Oct. 17, '67.
"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.
"Superheater saves at least 25 per cent in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ETNA IRON WORKS, San Francisco, Sept. 15, 1867.
"Superheater saves 25 to 30 per cent. in fuel; no priming"

CONTRA COSTA LAUNDRY, Oakland, July, 1868
"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. CO., Cal., August, 1868
"Superheater causes a use of 40 lbs. steam instead of 60 lbs.; use much less water, and there is a saving of fuel." (2 acts.)

SIXTH MECHANICS' INST. FAIR, S. F., Sept. 4, 1868.
"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.
"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works better."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

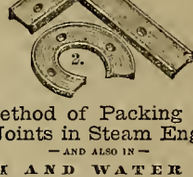
Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.
JOHN L. CONSTABLE, Engineer. 25v18tf

The Most Important Invention of the Day.

HALL & LEE'S



New Method of Packing Stationary Joints in Steam Engines,

— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville, State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

A Long Desired Article

FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using

CAMILLE CHAMPOO,

which not only does away with the poor soap so offensive to use, and so injurious to the hair, but it cleans the head, strengthens and beautifies the hair, preserves the color and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERTON & UELLING, 773 Mission street, San Francisco, Cal.

HEATHFIELD & BOGLE, Wholesale Druggists, 200 and 208 Battery street, San Francisco, sole Agents for the Pacific Coast. 24v18 3m

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

Familiar Science.

Changes in the Earth's Surface.

To the casnal ohserver the "solid earth" on which we tread, and the hills and valleys which surround us, appear firm and unchangeahle, except when moved by some terrihle convulsion of natnre, snch as an earthquake or volcanic outhreak. Yet long-continued and careful ohservations show that almost every section of the earth's surface is slowly, bnt surely and constantly, changing its position with reference to neighhoring sections. The solid earth is not as solid as it seems, bnt is slowly heaving up and down in great waves—when one part goes np another goes down. Wherever careful geological examinations have heen made, it appears that there is scarcely a mountain or a valley which has not been snhjected to repeated oscillations of this character. These undulations do not partake of the progressive movement which we usnally associate with wave motions; hnt are more like elevations and depressions caused hy forces from beneath, being alternately pnt forth and withdrawn. The "everlasting hills" are only the frozen ripples of this world-wide undulation, which the falling rains and rnnning rivers are constantly wearing away. The sharp eye of the geologist has detected and measured the movement of these earth waves, and has pointed them out on almost every portion of the earth.

Here an old historic plain has been converted into marsh and meadow; there the site of an ancient city, once hy the seaside, is now beneath the waves; while yonder hoth harbor and city are a good mile inland. In some places the action of rivers has effected changes, as in the delta of the Ganges and the Nile; in others, rains and frosts and volcanic scoriæ have been the agents; while by far the most numerons and extensive changes can he attributed to no other canse thau the gradual upheaval or subsidence of the earth's crust itself. Maps have heen constrncted to show the changes which have been made along the sea shores of Europe and the British Isles. Some of these changes are deduced from geological data, and are, of conrse, the result of countless ages; others, drawn from historical data, show that two or three thousand years are sufficient to so materially change many localities as to seriously interfere with commercial movements.

Observations made during the last fifty years npon the great lakes of this continent, render it extremely prohahle that the ports employed for the commerce of that region will in time have to he changed to other locations. It is now a well established fact that nearly the entire west coast of South America is rising so rapidly from the sea that many of the best harhors on that coast will soon he worthless. The same is true of the coast of Sweden and of all the region ahont the islaud of New Foundland.

On the contrary, England, at some points, is sinking into the sea; although, in other localities, the reverse is true. Many parts of the Atlantic sea coast are also sinking, especially in Georgia, South Carolina, Florida, New Jersey and Massachusetts. Some parts of the New Jersey shore, it is estimated, are sinking as rapidly as two feet in one hundred years. Near Cape May, the sea, in some places, has advanced inland nearly a mile, and in one place a sea-side hotel has heen moved inland twice within a hundred years to keep it away from the encroaching waves; although it was first erected a full half mile from the water. There are portions along the northern coast of the Indian Ocean where there is evidently a slow subsidence in progress, while portions of the coast of China are evidently rising.

It appears, then, that the actual condition of the earth and the limits of the sea are by no means fixed. The canses which have fashioned the surface of the globe and produced the Alps of Europe, the Himalayas of Asia, and the Cordilleras of the New World, have not yet ceased their action. It is evident that the thickness of the terrestrial crust is yet hnt a fraction compared to the mass of the earth. The earthquake and volcano, more strikingly indeed, but not more surely, than the slower movements ahove mentioned, show us that the pent up energies of internal fires are yet at work—that they threaten unceasingly. Science, however, teaches us that these energies are gradnally dying ont, and that we need fear no future general catastrophe, like that great volcanic outhreak which preceded and prodnced the glacial epoch. Moreover, it is the Christian's privilege to feel that the Divine Power which has gradually built np the the earth—progressing from inorganic to organic existence, and thence advancing from mere animal life to intelligence, approaching even to that of divinity itself, will not retrograde, bnt rather add to the glories of His works hy the development of heings still more perfect, and with moral qualities and intellectual powers of which man, in his present condition, can form no adequate conception. Rather than look forward to another destructive convulsion, whereby man may he swept from the earth, shonld we not sooner remember the "bow of promise," and look forward to the time when the inhabitants of the earth may "be as the angels of God?"

The Blessings of Sun Light.

All the material blessings which we enjoy npon earth come to us through the agency of sun light. Our clothing is borrowed from the snn; the fiber, whether from vegetahle or animal, owes its growth to the direct action of the sun's rays. So of the hread which we eat. The delicions steak or flavory roast of our repast, was nonrished npon the products of sun light. The wine which sparkles, is hut bottled snnshine; and the water is maintained in the pehhly hrook hy the evaporating influence of the same great luminary. Our sngar, tea, coffee and spices, are hut the embodied influences of a tropical snn. The great motive agent of nearly all our mechanical power and the source of artificial warmth, is bnt sunshine solidified long ages hefore man existed, and stored up in the earth to he liberated for his benefit in these latter days. When we go to regions where the sun is not, desolation and darkness reigns. Without the snn, the hlood in our veins would cease to flow, and man would die. The great and mysterious forces of heat, light, electricity and chemical affinity, "dancing their magic round, and alternately assuming each other's form and action," are mere emanations from the same great central source from which issue all other hlessings, that contribnte to man's happiness and existence. How grand, heautiful and simple is the plan of creation, as revealed in the light of science. Its simplicity and nnity are completely consistent with the attributes of Deity as revealed in the Book of Books.

Singular Development of Heat in the Fusion of Tin with Platinum.—A very extraordinary exhihition of heat is developed in fusing together platinum and tin, when performed in the following manner: Take a small piece of tin foil and wrap it in a piece of platinum foil of the same size. Expose the pellet so made npon charcoal to the action of the blow-pipe; the union of the two metals will be indicated by a rapid gyratory motion, and hy an extreme hrilliancy of the light emitted—showing that an extraordinary degree of heat is being developed, and in a remarkahle mannor. If the glohule thus melted is allowed to drop into an earthen hasin filled with water, it will remain for a minute red hot at the bottom; and snch is the intensity of the heat developed, that it will melt and remove the glazing from that part of the basin with which it comes in contact.

The Railroad and the Telegraph.—It is said that the receipts of the telegraph have fallen off ahout one-fourth since the completion of the Pacific Railroad. Mail communications are now so rapid, that the public will not pay the high prices charged hy the telegraph company. A reductiou of rates to one-half wonld donhtless add to the net profits of the company and greatly subserve the commercial interests of the Pacific Coast.

For years the Mining and Scientific Press has been one of our most welcome exchanges from San Francisco, because of its sterling merit in publishing valuable information concerning mining operations, new discoveries in quartz milling, mechanical inventions, which rarely ever is seen in our daily newspapers.

Every office connected with a mine, and every quartz mill, and every hoisting work over a mine ought to take a copy of the Mining and Scientific Press. The cost is only $5 a year.

The publishers of the Press are also Patent Agents, and inventors or improvers in the mechanic arts who desire to file caveats, or to obtain their final patents, can have the business promptly and honestly attended to through the agency of Dewey & Co.—*Gold Hill News, July 9th*, 1869.

San Francisco Verein.—We acknowledge the receipt of an invitation to attend the "Bundesturnfest," to take place at Hayes' Park on the 22d, 23d and 24th inst.

Table of Contents of Our Illustrated Circular.

[sent free on application.]

Advancing Cases; Advantages, Important; Assignments, Forms, Cost, etc.; Caveats of what they Consist, Form of, Cost, how Filed effectively; Cost of Obtaining Patents; Confidential Advice; Copies of Patents, Assignments, etc.; Copyrights; Dangers of Delay; Designs, Patents for; Engravings and Illustrations; Engine, Condensing-Beam—Illustrated; Extension of Patents; Foreign Patents—all Countries; Foreign Inventors; Hints to Inventors; Government Fees, List of; Home Counsel; How to Obtain Patents—Steps Necessary; Hydrostatic Press—Illustrated; Interferences; Influence at Washington; Laws (U. S.) and Decisions Relating to Patents; Lathe, Engine—Illustrated; Letters Patent—of what they Consist; Library, Reports, Law Books; Locomotive Engine—Illustrated; Medicines or Compounds, Patent for; Mechanical Movements—Illustrated; Mining and Scientific Press Office; Processes, Patents for; Record of Pacific Coast Patents; Reissues; Rejections—Cause and Remedy; Reports of Patent Office; Rights and Privileges of Inventors and Patentees; Saving of Time; Self-evident Facts; Selling Patent Rights; Springs, Various Kinds—Illustrated; Stamp Battery, Quartz—Illustrated; Telegraph, Patent Business by; Unsuccessful Applicants; Who can Obtain Letters Patents; What Claims can be Patented; Worthless Patents, Candid Reasoning.

☞ This pamphlet sent free on receipt of postage.

The Eastern visitors to California know enough to provide themselves with Muller's tourist's glasses before proceeding to see the rocky cliffs, 3,000 feet high, in the Yosemite Valley. ***

Costa Rica Mahogany can be had on very reasonable terms of Hobbs & Gilmore, Market street, near Beale. ***

Continental Life Insuraoce Co., 302 Montgomery street, corner of Pine.

Returned.—Dr J. H. Paino, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. Howland.

Co-Operative Union Store.—This is becoming one of the most useful Institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco 21v18-4w

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Bocch, Sperino, and Hewlitz Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's. San Francisco 21v18-3m

Asiatic Cholera.—The Strongest Proof of Intrinsic Merit.—Dear Sir: I ought to have acknowledged long ago the box of Pain Killer you had the goodness to send me. Its coming was most providential. I believe hundred of lives were saved, under God, by it. The Cholera appeared here soon after we received it. We resorted at once to the Pain Killer, using as directed for Cholera. A list was kept of all to whom the Pain Killer was given, and our native assistants assured us that eight out of every ten to whom it was prescribed recovered. It has proved an incalculable blessing to multitudes of poor people throughout all this region. Our native preachers are never willing to go out on their excursions without a supply of the Pain Killer. It gives them favor in the eyes of the people, and access to families by whom otherwise they would be very indifferently received. Believe me, gratefully and faithfully yours, J. M. JOHNSON, Missionary, Swatow, China.

The Pain Killer is sold by all Druggists and dealers in Family Medicines.
REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents. aalm

New Advertisements.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.
THOMAS MOONEY, President.
August 2, 1869. 6v19-1m

The Fourth Volume of the Mechanics' Fair Daily Press will be printed in the Pavilion, commencing September 14th. It will be distributed free to over **100,000** different persons affording it a wide and immense circulation.

The Fair Press will contain eight pages, with many illustrations and interesting descriptions of articles on exhibition, amusing incidents of the Fair, and will form a very desirable first-class advertising medium. Advertisers will do well to secure their space early.

DEWEY & CO., Prop's,
Mining and Scientific Press, 414 Clay street.

To Let—Room 18 by 36 feet, second story, 414 Clay street. Rent cheap.

The Perfection of Prepared Cocoa.

MARAVILLA COCOA.

Sole Proprietors—TAYLOR BROTHERS, London.

The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.

"A SUCCESS UNPRECEDENTED."

[See following extract from the Globe of May 14, 1868.]

"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."

Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19-6m

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To extend their circulation in California, the proprietors of

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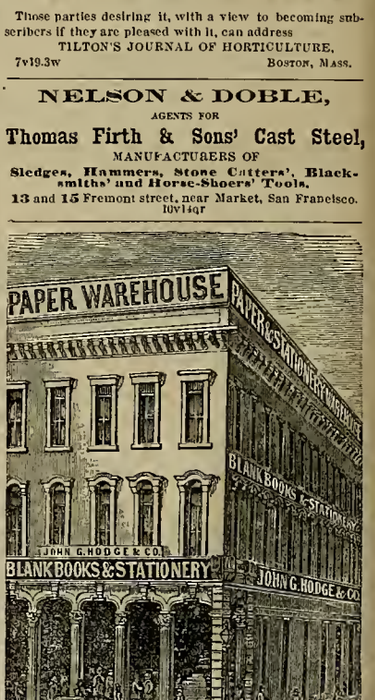
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☞ Special attention given to orders from Country Merchants 2v16eow-16p

Information for Inventors and Patentees.

AN EXTRACT

From the American and Foreign Patent Agency Circular of the Mining and Scientific Press, Dewey & Co., Publishers.

Patent Rejections.

FIRST. Refusals are always made by the Patent Office if there is any informality in the specification, or if it does not contain the entire subject matter of the invention, and is not properly arranged and stamped. A slight omission often proves fatal.

SECOND. If the drawings are defective, and are not executed in an artistic manner in India ink, and on sheets of the required size, they are subject to rejection.

THIRD. Applications are always rejected where the claims conflict with others already patented.

If the rejection should be an unjust one—which sometimes happens—it can generally be reversed and the patent obtained by contesting the case.

Taking it for granted always that when an inventor makes an application that he is in earnest, we will guarantee to secure the patent if it is possible to be had.

Inventors who have rejected cases, prepared either by themselves, or for them by other agents, and desire to ascertain their prospects of success by further efforts, are invited to avail themselves of our unsurpassed facilities in securing favorable results. We have been successful in securing Letters Patent in many such cases. Our terms are very moderate.

Our long experience as editors and publishers M. & S. P. guarantees our familiarity with most of the subjects of patents on this coast, and insures inventors a more ready understanding of their cases than they can secure from any other quarter.

It is not the duty of any government official in or out of the Patent Office to prepare patent papers, or make models. These must be provided by the applicant or his attorney, according to law, *otherwise his claim will not be considered.*

Dangers of Delay.

Situated so remote from the seat of Government, delays are even more dangerous to the inventors of the Pacific coast than to applicants in the Eastern States. Valuable patents may be lost by the extra time consumed in transmitting specifications from Eastern agencies back to this coast for the signature of the inventor, or by reason of return for amendment when addressed directly by the inventor to the Government.

Keep Right Along!

DON'T STOP, because you have made one invention which did not prove a success. If you were anticipated by some one who had previously put your ideas into successful practice, it shows you *can* invent.

DON'T WAIT the result of your application for a patent, no matter how valuable may be your invention. Go ahead with your business. Don't be idle.

DON'T STOP because you have made one, or a dozen good inventions. Dispose of a portion, and go ahead. If you have talents, use them. They will be improved thereby, and yourself and community benefitted.

Few inventors introduce or sell their patents too quickly, while hundreds are too slow, and are overtaken by the march of improvements.

Advancing Cases.

If any case placed in our hands meets with rejection, we do not wait to write and inform the inventor of this fact, (as is the case with most agents,) but our representative at Washington proceeds at once to examine the stated objections, and if it be not a just and unavoidable decision, the claims of the inventor will be presistently argued before the Examiner, and if possible the decision reversed.

Inventors on the Pacific Coast, located at great distance from the Patent Office, of all others, should be careful to avoid inexperienced, dishonest, or otherwise unreliable and irresponsible agents.

Inventors having models in our possession must send written orders when they desire any particular friend to see them.

Established in 1860.

Our business has been long and successfully practiced, and we are thoroughly responsible for the confidence and valuable trusts placed in our charge. Our advice can always be relied upon as correct.

The principal portion of the patent business of this coast has been done, and is still being done, through our agency. We are familiar with and have full records of all former cases, and can more correctly judge of the value and patentability of inventions discovered here, than any other agents.

☞Our Illustrated Pamphlet, from which the above is an extract, will be furnished free on receipt of postage stamp. Confidential advice given, and every legitimate branch of Patent Soliciting business promptly and faithfully executed, by

DEWEY & CO.,

Publishers Mining and Scientific Press, 414 Clay street, San Francisco.

WATERING STREET-CAR HORSES.—A recent invention for watering the horses employed in street cars, or elsewhere, without stopping, is so planned that the driver can by pulling a string let the water from a tank on the top of the car through a flexible tube into the bit, which is made hollow and pierced with holes. The animal soon learns to drink in this way.

Important to Inventors.

MARYSVILLE, CAL., August 13th, 1869.

MESSRS. DEWEY & CO.—GENTS:—Enclosed find $20 (currency) for last fees on patent for gang plow. I am very much surprised, after opinions received from Munn & Co. I am, respectfully, yours, F. A. H.

The original of the above letter (and many others with similar reference to other agencies) can be seen at this office, in cases for which we have secured patents for inventors who had been denied patents, or who had paid for being told that they could not obtain patents. Inventors on the Pacific coast are fast learning to patronize first-class home agents, who better understand their cases and will give more thorough attention to every invention entrusted to their keeping.

DEWEY & CO.,
U. S. and Foreign Patent Agents.

Important to Assayers.

Crucibles.

The Patent Plumbago Crucible Co.,

Manufacturers of all kinds of

Melting Pots, Portable Furnaces,

CRUCIBLES, and other fire-standing Goods,

Battersea Works, London.

THE MORGAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; change of temperature has no effect on them; stand on the average forty to fifty pourings.

CERTIFICATES:

United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT.

Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 419 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co.—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S Hallidie & Co.—Gents.:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale of like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,

A. S. HALLIDIE & CO.,
419 Front street, San Francisco

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PACIFIC

Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

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Every Variety of Shafting,

Embracing ALL SIZES of

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—ALSO—

HAMMERED IRON

Of every description and size.

☞Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention.

☞The highest price paid for Scrap Iron 9v143m9p

Mining Notices--Continued.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of August, 1869, an assessment of fifty (50c) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventh day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-third day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. au7

Cordillera Gold and Silver Mining Company.—Morelos District, Chihuahua, Mexico.

Notice is hereby given, that at a meeting of the Board of trustees of said Company, held on the twenty-third day of July, 1869, an assessment of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 321 Washington street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the ninth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

HENRY R. REED, Secretary.

Office, 321 Washington street, San Francisco. jy24

Daniel Webster Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of June, 1869, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office.

Any stock upon which said assessment shall remain unpaid on the thirtieth (30th) day of July, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the nineteenth day of August, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. jy3

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Friday, the twenty-seventh day of August, 1869, and the sale thereof until Thursday, the sixteenth day of September, 1869. By order of the Board of Trustees.

jy31 O. D. SQUIRE, Secretary.

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five (5c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DuPRAT, Secretary.

Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy27

George Washington Silver Mining Company.

Location of Works: White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the first (1st) day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
H K Snow	unissued	276	$27 60
J B Scott	unissued	1622½	162 25
J J Ryan	unissued	1000	100 10
C A Kidder	unissued	500	50 00
W J Nightingale	2	138	6 90
Geo W Vincent	33	138	6 90
W H Stanley	64 to 66 10-ea	300	15 00
W H Stanley	67, 68 10-ea	20	1 00
W H Stanley	71 to 86 10-ea	160	8 00
J P Voorhees	121	125	6 25
Osgood Hilton	122	125	6 25
A Brown	127	125	6 25
F A Cord	132	125	6 25

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

THOS. J. OWENS, Secretary.

Office, No. 10 Stevenson Building, San Francisco. jy10

Glenwood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 418 California street, San Francisco. je12

Hamilton Hydraulic Tunnel and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco; or to M. T. Brewer, Hamilton, Nevada.

Any stock upon which said assessment shall remain unpaid on the tenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. au14

Hornet Silver Mining Company.—Location of Works: White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of July, 1869, an assessment of ten (10c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth (8th) day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the thirtieth (30th) day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. S. MARTIN, Secretary.

Office, No. 11 Hayward's Building, 419 California street, San Francisco. jy31

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of August, 1869, an assessment of two dollars and fifty cents ($2.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-fifth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary.

Office, 220 Clay street, San Francisco, Cal. au7

Delays are Dangerous.—Inventors on the Pacific Coast should bear in mind that by patronizing our Patent Agency they can sign all necessary papers for securing patents almost immediately, thereby avoiding months of delay requisite in transacting business through Eastern agencies.

Lyon Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty first day of July, 1869, an assessment of two dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the thirtieth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M BUFFINGTON, Secretary.

Office, Room 37 New Merchants' Exchange, California street, San Francisco. jy24

Marlborough Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the nineteenth day of July, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-fourth day of August, 1869, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the thirteenth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

AUG. DuPRAT, Secretary.

Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. jy24

Office Senntor Silver Mining Company.—Location of Mine: Storey County, State of Nevada.

NOTICE.—The Annual Meeting of the stockholders of the Senator Silver Mining Company will be held on WEDNESDAY, the twenty-fifth day of August, 1869, at one o'clock P. M., at the office of the Company, No. 408 California street, for the purpose of electing a Board of Trustees to serve for the ensuing year, and for the transaction of such other business as may properly come before the meeting.

T B WINGARD, Secretary.

San Francisco, August 6th, 1869. au7

Silver Sprout Mining Company.—Location of Works and Mines: Kearsarge District, Inyo county, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. jy31

Thunderbolt Mill and Mining Company.—Location of Works: White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the first day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J B Scott	unissued	5820	$291 00
H K Snow	unissued	1110	55 50
C Robinson	unissued	2200	110 00
Catherine Caffrey	3	50	1 25
Geo W Vincent	24	555	13 88
W J Nightingale	25	111	2 78
W J Nightingale	26	111	2 78
W J Nightingale	27	111	2 78
W J Nightingale	28	111	2 78
W J Nightingale	29	111	2 77
H H Scott	75	100	2 50
H H Scott	76	100	2 50
H K Snow	30	120	3 00
K K Snow	31	200	5 00

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

THOS. J. OWENS, Secretary.

Office, No. 10 Stevenson Building, San Francisco, Cal. jy14

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 439 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Friday, the seventeenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the seventh day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. H. RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. au14

Yosemite Mining Company, Humboldt County, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the second (2d) day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W N Wade	148	315	$157 50

And in accordance with law, and an order of the Board of Trustees, made on the second (2d) day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. S. L. Jones & Co., auctioneers, 207 and 209 California street, on Tuesday, the twenty-fourth day of August, 1869, at the hour of 1½ o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. H. CROWE, Secretary *pro tem.*

Office, No. 220 Clay street, San Francisco. au5

WHERE TO ADVERTISE.—The attention of traders and mill machinists is called to the fact that the *Mountain Messenger*, of Downieville, Sierra County, possesses many special advantages as an advertising medium over a majority of the interior press, it being the only public journal published within a radius of sixty miles, in the richest and most populous mining sections of the State. Its weekly edition is double the average of country papers, being without the range of large dailies, and having no competition at home. Its local columns afford many items for our city cotemporaries, while its rates of advertising are reasonably low 10v17tf

The Pennsylvania Silurian.

The following is a paragraph from an editorial upon the Pennsylvania Railroad,—in the *U. S. Railroad and Mining Register* of July 31st: "From Philadelphia to Harrisburg the traveler steams over the surface of the oldest deposits known to geology—so old that they have suffered all the changes of external posture and internal structure which the shrinking of the earth's crust, the slow chemistry of moisture, warmth and elemental affinities and the eroding powers of the atmosphere, combined and incessant, could effect. The strata lie in steep and contorted shapes, scarred with seams and gashes filled again with crystalline quartz, or carbonate of lime, deprived of their original granular constituents and of every trace of animal or vegetable life, the sands converted into granite and gneiss, the mud into mica slates and talc slates, the limestone into marble. Only in this belt of lower silurian and sub-silurian formations could the scientific tourist be arrested to examine serpentine quarries, nickel and chrome-iron mines, or saccharine white marble. Only here would it be worth while for the returning Californian to try his pan for gold. Infinite ages have reduced the Alpine range which once lifted its peaks thousands of feet into the air where Philadelphia, Westchester and Havre de Grace now lie, to a rolling plain nowhere more than six or seven hundred feet above tidewater. The observer must carry with him his aueroid harometer and watch the oscillations of its index, to be aware that he passes a summit of 542 feet above the Schuylkill river before he descends into the Chester Valley at Downington. Smiling fields of corn and dairy farms, spread out where in the earliest ages of the earth glaciers descended between aiguilles (needle-like peaks) pointed upwards from fields of everlasting snow."

AERIAL NAVIGATION.—"The dynamic difficulty offered hy the atmosphere is as serious a hindrance as the power of the winds. It arises from the yielding nature of the air, and the difficulty of getting any efficient resistance to the wings or propellers that must he used. In steamboat navigation the same difficulty exists from the fact that the water does not firmly resist the paddles. The power is wasted on the yielding medium, and this loss, which is techuically called "the slip," would be ahout eight hundred times greater in the atmosphere, from its greater lightness. We are not aware that any exact calculations have heen made of the enormous waste of power in acting upon the atmosphere by any species of wings, nor has it ever heen determined whether any arrangement of whirling or flapping propellers can he used without enormous additional waste of power from the nature of the apparatus. With all these drawhacks, however, flying is still a mechanical possibility."—*Iron Age.*

SOAP GREASE AND WHISKY.—A company formed in Chicago will soon he distilling alcohol and extracting soap grease from ordinary city garhage. The process is a patented one, and consists in taking the garhage just as it is hauled off in the city carts, dumping it into tight tanks, and boiling six hours at a temperature of 212 degrees. This dissolves the whole mass, which is run into fermenting tuhs and worked with yeast. The soap grease and impurities rise to the top of the tuhs, and are skimmed off, and the residuum is distilled in the regular way. It is estimated that each barrel of garbage will yield three pounds of soap grease and four gallons of proof spirits. The soap grease is o course as good as any other, but the alcohol hetrays its origin hy an odor which requires further processes for its removal.—*Stockholder.*

THE MOUNT WASHINGTON "SKY RAILWAY."—The station at the hase of the mountain is six miles from the Fahyan place. The road ascends the mountains in a tolerahly straight course, following the general line of the old Fabyan bridle path. The upper depot is 2,685 feet ahove the level of the sea, or 1,117 feet ahove the White Mountain House. This leaves a grade of 3,600 feet to be overcome, as the hight of the mountain is 6,285 feet ahove the level of the sea. The heaviest grade is at the rate of 1,906 feet to the mile, and the lightest 440 feet. The reader may realize the proportions of the steepest grade just mentioned hy placing a plank some thirty feet long one end at the hase-hoard of a room twenty-eight feet long and eight feet high and the other end against the opposite wall near the ceiliug.

Machinists and Foundries.

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,

SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,

SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing Furnaces Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hausbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first-class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16if

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. GALLAGHER. J. H. WEED V. KINOWELL.

9v13-1y

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco,

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

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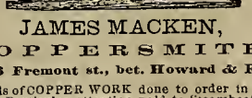

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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.

13v11

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EUREKA FOUNDRY,

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LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

6v116qr No. 28 Fremont street, San Francisco.

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Fine or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

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WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

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Foundry and Iron Works.

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MANUFACTURERS OF

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Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 2-qy

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Iron and Locomotive Works.

Incorporated, April 30, 1868. Capital, $1,000,000.

Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.

Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Devoe, Dinsmore & Co., San Francisco.

Steam Engine Builders, Boiler Makers,

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All work in their line attended to with promptness and dispatch.

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Blacksmith and Machine Shop,

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All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to ☞ All work warranted.

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GLASGOW

Iron and Metal Importing Company

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Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings which they offer to the trade on liberal terms.

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Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

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G. T. PRACY.

MACHINE WORKS,

NOS. 109 and 111 MISSION STREET,

Between Main and Spear.

New and second-hand

Engines and Boilers,

FOR SALE.

Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

MANUFACTURER OF

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And MILL MACHINERY of every description.

PRACY'S

New and Improved

STEAM ENGINE

REGULATORS,

The best and cheapest yet invented—manufactured and for sale. Parties are invited to examine it in practical operation.

F. A. HUNTINGTON'S

Shingle Machines

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Particular attention paid to Repairing.

☞ All work guaranteed to be done in a first-class manner, and at the lowest rates. 12v17tf

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Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison.

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand. Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the

1v17tf United States

HIBBERD, SANBORN & CO.,

South Point Mills, Berry Street,

Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material turnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.

6v19-3m

A NEW

Gold Metal.

THE GOLD METAL WATCHES

Now being introduced by

C. E. COLLINS & CO.,

No. 629 Washington Street,

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Surpass anything yet made in the way of an imitation Gold Watch. They wear well, and keep good time.

The Ladies' Watches cost $10, $15 and $20 each.
The Gentlemen's cost $15 and $20 each.
Chains, from $2 to $6 each.

Can be sent by Express to be paid for on delivery.

C. E. COLLINS & CO.,

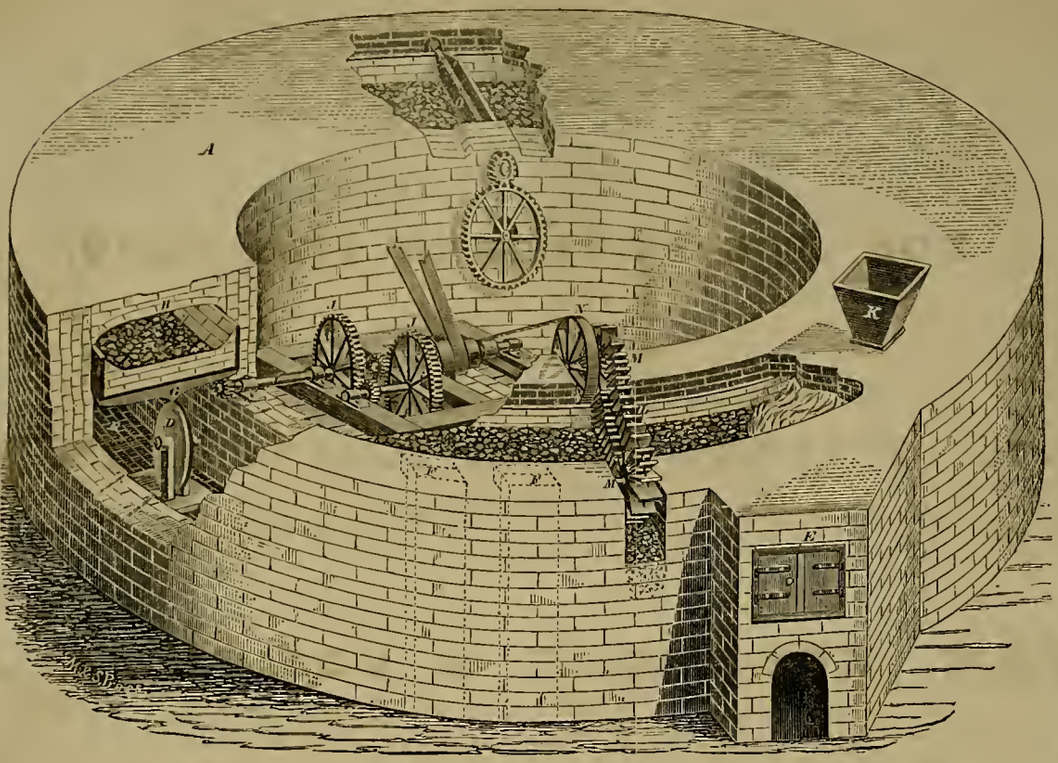
No. 629 Washington street, San Francisco.

P. S.—Where six watches of the above are ordered at one time, we will send one extra, free of all charges.

We also deal in the finest Gold and Silver Watches, Watch Materials, etc. Send for circulars or prices.

7v19 4t

Fred. Ernst's Patent Rotary Roasting Furnace.



This is a mechanical furnace, which does away entirely with manual labor, excepting a fireman. It charges, roasts, stirs, and discharges the ore by a very simple mechanical contrivance,—in fact performs all the operation required in the oxidation or chlorination process of roasting gold or silver ores.

The ore is taken by means of an elevator from the battery, and is discharged constantly and regularly into the hopper, *K*, from whence it reaches the rotating hearth, *G*. This hearth consists of a cast iron orbicular ring paved or lined with bricks, and revolves on a series of iron rollers, *D*, and is kept continually in motion by means of the gearing, *J*. This gearing has two gear wheels, three feet in diameter, and pinions to regulate the speed from the cone pulley, increasing or diminishing it to conform to the required slow motion of the hearth, *G*. The hearth so charged and running constantly carries the ore into the first heat, which is next to the flues, and so passes all the different temperatures of the furnace, thus effecting a very uniform heating and chemical action on the ore; at the same time it has also to pass the stirrers, of which there are different kinds,—stationary and movable ones,—the number and speed of the latter varying according as the ore contains more or less sulphur. The movable paddle stirrers are shown at *O*. These movable stirrers are connected with the gearing under the iron bed of the hearth, *G*, as shown at different points, until it passes the fire-bridge, where it receives its ultimate and highest heat, and is then discharged by the discharging apparatus. This discharging apparatus consists of two chain or rag wheels, *M*, *M*. These two chain-wheels drive a double endless chain with inserted plates of iron (scrapers). The chain hanging loose underneath between the wheels draws these iron plates through the cavity of the hearth, and so discharges constantly the roasted ore. The construction of this furnace is of the simplest kind, and all the necessary castings can be easily transported even on mule-back. The loss of the silver by sublimation in present furnaces, it is claimed, is avoided in this, as the silver condenses before reaching the flues; the distance being great, and the heat diminishing gradually until the gases reach the point of final exit. Liberal terms are offered to parties who desire to use this furnace. Further information can be had by addressing the Inventor and Patentee,

To keep the current of air constant throughout the whole length of the furnace, the arch over the hearth decreases slightly from the fire-bridge toward the flues. For concentrated sulphurets it may be advantageous to increase the circumference of the hearth. The advantages claimed as attainable from the use of this machine are—the doing away with a large portion of the costly hand labor ordinarily required, and the better and more thorough accomplishment of the same by machinery. A great saving of fuel, not only through the length of the hearth, but also for the reason that all the gases which are lost by other furnaces are economically employed in this as a substitute for other fuel.

The furnace is so constructed that the large access of air required for the oxidation of the ore, in addition to that demanded for the consumption of these gases, does not operate to materially lower the temperature in the furnace. When the ore in this furnace is once desulphurized, the gases cannot form any new combination with the ores or metals therein, for the reason that while the currents of air and gases are moving to the rear, the furnace hearth is constantly advancing in an opposite direction.

F. ERNST, San Antonio, Lower California, Mexico,

Or by calling upon H. W. SCHMIDT, Druggist, Kearny street, corner of Sacramento, or at this office.

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setters for themselves, at the office, **229** Fremont street,

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REBELLIOUS ORES.

THE HAGAN FURNACE.

The above method for the purification of Rebellious Ores is respectfully offered to the public. Repeated actual workings show that the

HAGAN FURNACE

Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

It has never been claimed for it that it will extract gold from ores which do not contain any of that metal.

Parties owning rich but refractory veins, can treat with the undersigned upon the basis of

GUARANTEED RESULTS,

With responsible security. For an interview, and all desired particulars, address

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June 25 1869. 29v18 3m

Notice to Miners,
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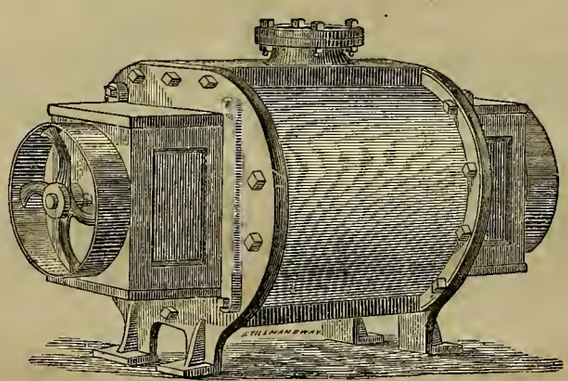
M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,
8v13-1y Stove Store, No. 1 Clay street, below Davis.

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

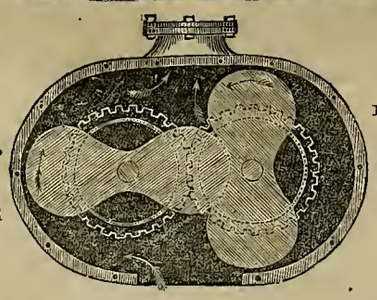
MANUFACTURED BY KEEP & BARGION,

At the Globe Iron Works, Stockton, California.



Awarded the First Premium at the Paris Exposition,

Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.



ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**

REQUIRES **Fifty Per Cent.** LESS POWER **Than any Blower** Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

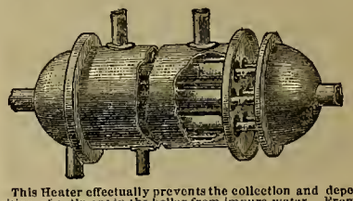
Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,
Globe Iron Works, Stockton, Cal.

4v16 3m

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,
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PAINT OILS,

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Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!

An elegant and complete assortment.

SOLE IMPORTERS OF

Devoe's Illuminating Oil

PATENT CANS.

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Sheffield Scientific School

Of Yale College, New Haven, Conn.

This department of Yale College, instituted in 1840, and endowed with the National Land Grant in 1866, furnishes advanced instruction in the various branches of Mathematical, Physical, and Natural Science.

The School is under the direction of the President of the College, a Board of thirteen Professors in different specialties, and six assistant instructors.

Regular courses of study, leading to the degree of Bachelor of Philosophy, conferred by Yale College, are arranged as follows: 1—Chemistry and Mineralogy. 2—Civil Engineering. 3—Mechanical Engineering. 4—Mining Engineering and Metallurgy. 5—Agriculture. 6—Natural History and Geology, and 7—Select Course.

Advanced students are also admitted to optional courses, and if already College graduates, are received as candidates for the degree of Doctor of Philosophy.

Tuition, $125 per year of forty weeks.

The Libraries, Museums, Laboratories and Apparatus, accessible to students, are varied and extensive.

For copies of the Annual Circular and Report, letters may be addressed to the "Secretary of the Sheffield Scientific School," New Haven, Conn. 13v6-1y16p

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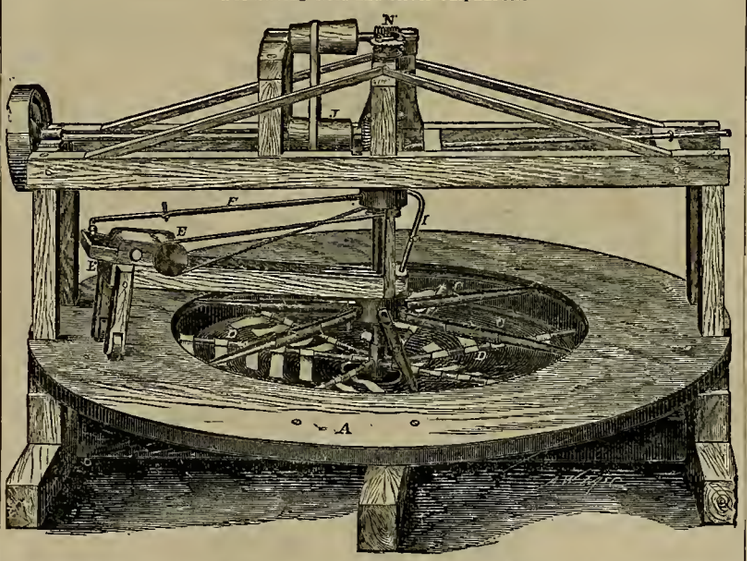
For Saving Gold and Silver Sulphurets.



One Machine, costing about $1,300, is sufficient to work the Sands from 25 to 30 Stamps,

Less power being required than for any other Machine. The attention of quartz millmen throughout the State is directed to the subjoined certificates, and if they desire they can visit the Amador Mining Co's mill, near Sutter Creek, the Eureka Co's mill at Grass Valley, or the Banner Co's mill near Nevada, and see for themselves.

CERTIFCATES:

Grass Valley, Jan. 4th, 1869.—This is to certify, that we have used the Paine, Stephens & Harry Concentrators for over twelve months. They have given us entire satisfaction, and are the best we ever used. WILLIAM WATT, Supt. Eureka Mine.

This is to certify, that we have had in use for the past 18 months one of Paine, Stephens & Co's Sulphuret Saving Machines, constructed by John T. Harry, (called a buddle,) and which operates satisfactorily, particularly so in saving fine sulphurets, and we recommend it as well worthy of use, even where other Concentrators are used above it, as it will pay if there are any sulphurets.

WM. L. TISDALE, Supt. Star Spangled Banner Mine.

Nevada City, Oct. 26, 1868.

Any one wishing to purchase one of these useful machines, can do so by applying to THOS. N. PAINE, at Grass Valley, Nevada County, or JOHN T. HARRY, Sutter Creek, Amador County.

13v16eow

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, AUGUST 28, 1869. VOLUME XIX. Number 9.

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The Money Market—Foreign Capital.

Active and successful efforts have been made within the last few days to remove the pressure from the money market, so that the grain, which is coming in so rapidly, might be freely handled, and business generally be placed upon a more satisfactory footing. The result of these efforts will be the immediate addition to our local capital of from three to five millions of dollars. We may remark in this connection, that one of the best evidences of the permanency of our resources may be found in the gratifying fact that during the very height of our present financial embarrassments, a large amount of foreign capital has been directed to our shores for investment, through the London and San Francisco Bank. Since the completion of the Pacific Railroad, one of the English Directors of that institution has visited this state and city, and became so thoroughly impressed with the reality and vastness of our resources as to recommend an immediate increase of the capital of the bank from one, to three and a half millions of dollars. One million has already been drawn, and the balance is about to be called for. A still farther sum of two and a quarter millions, will be added in the spring, if in the judgment of the manager here, it shall be thought expedient. These facts not only afford a gratifying evidence of the judicious financial management of our former Governor and Senator, Hon. Milton S. Latham, but also furnish an assurance that there will be no lack of means at our disposal, to give full employment to the vigorous enterprise of our citizens.

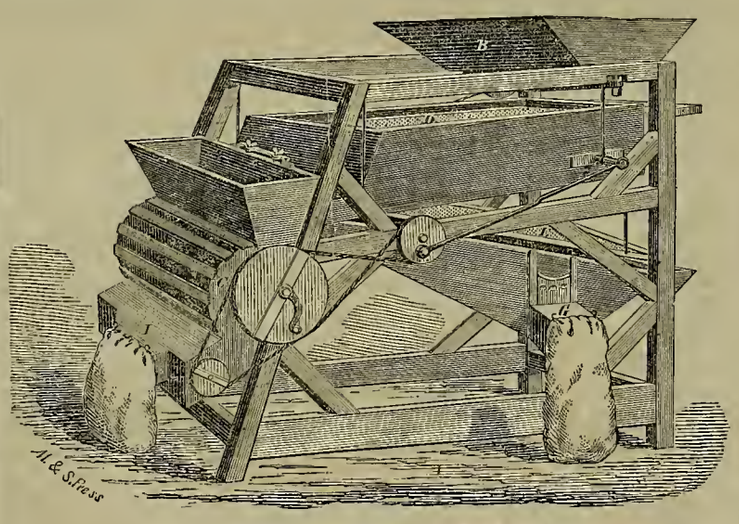
MERCHANDIZE AND TREASURE.—The merchandise exports from this city for July were $1,537,274 in value; $86,661 in excess of the same period for the year 1868. Thirty-five per cent. of this value was flour and wheat. The aggregate exports of the first seven months of the present year have been $10,282,642; a decrease of $913,559 from the same period of 1868. The treasure exports for July were $2,570,244; a decrease of $724,185 from July of 1868. The treasure shipments for the year, up to August 1st, have been $23,616,470; a decrease of $439,148.

CARL SHURZ, U. S. Senator from Missouri, arrived in this city last night. He was received at the landing by the German military and his fellow countrymen.

Crowley's Patent Grain Separator and Mixer.

Farmers on the Pacific Coast have shown more readiness to take advantage of new and improved machinery for putting in and harvesting crops than have the husbandmen of any other State in the Union. While this may be said in regard to their sagacity in producing crops, we believe they have been less choice in their method of preparing their cereals for the market, and perhaps have shown still greater negligence in the selection or preparation of the seed for sowing.

But as competition becomes closer, and buyers must figure upon smaller margins, and consumers become more discriminating in regard to quality, our farmers must for the future necessarily be more careful in these matters; and hence we find our local mechanics are devising and constructing new machines for cleaning grain.



CROWLEY'S PATENT GRAIN SEPARATOR AND MIXER.

We give to-day an illustration of an improved machine for separating and cleaning grain, it being used, however, more especially for cleaning wheat, and it has connected with it a device for immediately mixing the grain with a solution of sulphate of copper (commonly termed bluestone by the farmers), when it is to be used for seed, thus effectually preventing smut, and also protecting it from the ravages of birds and animals.

The grain is first emptied into a hopper, *B*, and is discharged through an adjustable feed gate, upon a series of shaking screens, *D*, which are so arranged that the crushed seeds and chaff will be caught by the first screen, the barley and oats by the next three, while the fair wheat which is fit for seed will be caught by the next screen, and discharged from it into the mixer, *C*. A finer screen, *E*, placed just below the one last mentioned, catches small wheat and saves it; but allows mustard and similar small seeds to fall upon the ground, or it may be saved and sacked at *G*. The mixer, *C*, is partially filled with a solution of sulphate of copper, and the wheat is stirred and intimately mixed with this solution by revolving stirrers, after which it is discharged over a screen which frees it from surplus moisture, and passes it to the sacks, or trough, which may be placed below the spout, *I*.

The machine works equally well for cleaning wheat alone without using any mixture. When constructed for warehouse and mill use exclusively, the mixing apparatus is left out of its construction.

The inventor claims that his device is simple and cheap in construction, not likely to get out of repair, and can be easily adjusted and operated.

This invention was patented through the Agency of this office, June 8th, 1869, by James J. Crowley, who now has the machine on exhibition at his shop, corner of Sixteenth and Valencia streets, near the Mission Dolores, in this city. Mr. Crowley is a young mechanic, who has for several years given much consideration to the construction of his machine. He proposes to sell machines and territorial rights.

It is very important that farmers should carefully separate their seed grain, so as to avoid sowing the smaller and inferior kernels, mustard, cockle, and other troublesome seeds; and we therefore take pleasure in calling attention to this machine, which we presume will be on exhibition at the Mechanics' Institute Fair. We believe the mixing of sulphate of copper with seed wheat is becoming more general; and Mr. Crowley's method of mixing is certainly a great improvement on the ordinary method of introducing the so-called "bluestone."

THE POWELL-COLORADO PARTY were in camp at the junction of White and Green rivers (headwaters of the Colorado) on the first of July, and would remain there until the sixth. All well.

DRAIN OF CAPITAL FROM THE MOUNTAINS.—The mountain papers are complaining of the drain of capital from the mountain districts to the cities. During the past year not less than $126,850, of profits derived from mining in Bridgeport township, Nevada county, has found its way to other parts of the State for investment. The Nevada *Gazette* says the whole county is being drained in the same way. Miners, as a general thing, are too much engaged in their mining operations, to pay personal attention to outside investments; hence they look for well established and paying stocks or real estate in which to invest. If our mountain friends wish to retain the profits of mining in their respective localities, they must establish manufacturing enterprises in the mountains, and prove to the miners that there is no necessity for their going abroad to seek safe and profitable investments. When a beginning is once made, and prosperity attained, business may be indefinitely increased with home capital. Until then, miners, as heretofore, will continue to send away their surplus earnings, and mountain towns will pass gradually into decay.

COL. AUGUSTIN HARAZTHY.—Late letters from the family of Col. Harazthy, in Nicaragua, remove all doubt of his death. He is believed to have lost his footing upon a log-crossing, fallen into the stream, and been seized by one of the alligators which abound therein. Thus has perished a man whose life has been one of adventure. Col. H. was of most active temperament, and was all his life searching out new countries in which to inaugurate some new industry. He was conspicuous in the early California vine culture, and has done much to further the wine interest of our State, both with his pen and by personal experimentation. At the time of his death, he was engaged in carrying on, and enlarging, an extensive sugar plantation.

THE FAIRS.—We are daily hearing of some new invention which has been entered for exhibition at the Mechanics' Fair in this city. The space will be allotted to the different exhibitors immediately. Articles will be received at the Pavilion on the first of September.

The eighth annual fair of the Northern District is now going on at Marysville. The *Appeal* says it is largely attended,—and that the pavilion presented a magnificent appearance on the evening of the 25th, the occasion being the delivery of the annual address by Rev. Dr. McKay.

The State Agricultural Fair commences at Sacramento on the 6th of September.

STREET MUD.—The mud of the paved streets of London has been carefully analysed and found to contain thirteen per cent. of iron, abraded from horse shoes and wheel tires, and about thirty-seven per cent. of animal refuse; the balance consists chiefly of earthy matter abraded from the pavements. Similar results were obtained from the mud of the streets of Dublin.

Communications.

Interesting Geological Observations.

GEOLOGICAL CHARACTERISTICS OF THE SIERRA NEVADA BETWEEN THE HEADWATERS OF THE FEATHER AND AMERICAN RIVERS—SOURCE OF THE ANCIENT RIVERS—COAL.

[Written for the Mining and Scientific Press.]

Standing at a point on Feather river in Long Valley, which may he termed the outlet of Mohawk Valley, we find ourselves just where the most eastern range of the schistose class of rocks is lost to the eyo. The river at this point is running over a mass of homogencous-cemented boulders and sediment of extreme hardness, the cementing material being the washed sediment from lava, the boulders presenting the appearance of having been long enbjected to the action of water. This deposit does not contain any trace of quartz, granite, or gold. Overlying this is a stratum of washed *debris* of granite and quartz containing traces of gold. Following further up the river, another class of conglomerate cement forms the bed or layer over which the river runs. This cement rises on the south side of the river to a perpendicular height of nearly a thousand feet; while to the north, small knobs or spurs of gray granite appear.

Back from the river, rises an abrnpt ridge of igneous slate and trap, forming, as it were, an immense wall to this basin, on the north. The aforementioned cement, which extends to the south for miles, is formed of trap *debris*, sedimentary wash and scorea, and is nearly in all cases *nonauriferous*. It is accompanied by another class of cement, composed of trap rocks principally, having occasioually granite and quartz gravel interspersed. This is also auriferous.

These two kinds of cement-conglomerates cover a vast portion of the middle of Plumas County, the upper or eastern portion of Sierra, Nevada and Placer counties, and present unmistakahle evideuce that this now elevated mass was once the bed of a great lake or chain of lakes, forming the western border of a chain of volcanic basins to the east.

Origin of the Ancient Ca'ifornia Rivers.

This great lake chain evidently formed the source of the old river channels to the west, before and during the eruptive period, and from this locality was also derived the great masses of silicious rocks and auriferous deposits, produced from the consolidation of solfatarous matter in vein form. It is only occasionally that the more primitive class of rocks is fonnd forming the crest of a few high peaks such as Eureka Mountain and the Sierra Buttes further south. These peaks present the appearance of having been directly over the point where the greatest uplifting force was exerted, crowding them up through the general enrrounding mass. Such is the character of the monntain south of onr starting point, on Feather River.

Eureka Mountain and the Sierra Buttes.

This mountain, rising above these beforementioned classes of sedimentary and diluvial cements, like an island, consists of slate on the west and northwest, its center being mostly feldspar and micaceous gray granite, through which passes the famed metalliferous quartz lodes, known as the Eureka Mountain series of ledgee, which have proved to be extensive, permanent and remunerative; having been worked from the earliest days of quartz mining in California. This range of rocks has a trend nearly north and south, taking in its course a somewhat circular form, going north, and being lost to the eye crossing Feather River, under the above-mentioned strata of cement.

The gangue, or accompanying rock of the metalliferous lodes, is a talcose, gneiss and porphyry; and still further to the east, forming the east side of the mountain, is a very coarse feldspathic granite, its feldspar flakes being of a greenish color. On the west, between the schistose, or slate class of rocks, and the granite, is a series of volcanic or mountain limestone, with occasional porphyritic iron veins. This series of rocks, lying nearly in the same order or relation to each other, extends southerly, crossing Jamison Creek and rising, forms the Gold Valley, and Gold Lake ridge in Sierra County, and the celebrated *Sierra Buttes Mountain*, passing across the upper part of Nevada County into Placer County. This class of rocks sometimes loses its coarseness, or texture of grain, and changes from auriferous to copper bearing; but the elementary constituents of the main body of rock remains the same as at other places miles apart on the same range. There is sufficient similarity in the rocks forming the crest of the Sierra Nevada, through portions of Placer, Nevada, Sierra and Plumas, to be recognized as of the same class. The trend of this range through Plumas County, to the north of our starting point, is via. the west side of Genesee and Indian valleys.

Following up Feather River

from our starting point, the country becomes more open and level, till it finally widens and forms what is called Mohawk and Sierra valleys. These valley bottoms are composed of alluvial deposits. While some of the streams, flowing into Feather River, have cut through a deep strata of diluvial and sedimentary rocks, which show marked indications of the valleys having been large lakes, at some earlier period, and which, by Feather River wearing and cutting down its outlet, near the mouth of Jamison Creek, have been gradually drained of their water.

The Coal Lately Discovered

in this neighborhood, lies under this strata of diluvial *debris* deposited from the higher range of primary rocks. Underneath this, is a silicious layer of sedimentary deposit, intermixed with aluminous layers to a depth ranging from a few feet to 400 feet; the river, in places, having wasted this deposit away to its present level, has exposed coal-shale in several places where it forms its bed. The whole class of lacustrine deposits lie in a horizontal strata. The coal is a formation of compressed vegetable matter, which has evidently belonged to the mosses, or cryptogamic class of vegetation. It has a slight dip to the east, and is rent at regular intervals, forming what may be termed "cleavage" of straight lines or seams; showing (where the river has broke through the layer) a joint as straight as if it had been lined and hewn with a broad-ax. These lines have a course two degrees west of magnetic north, and have very likely been caused hy volcanic or subterranean motion, from west to east. The top or uppermost layer of coal has a soft, brown, coffee-colored appearance, resembling mahogany, when first dug; but by exposure to the air, or water near the surface, it changes to a jet black; assuming a grayish color by longer exposure. It is nearly pure hydro-carhon, containing no grit or sandy matter; its residue, after burning, being a fine silicate of alumina, which has been deposited from a solution contained in water. It burns very freely, producing a bright red heat, with consuiderahle flame, and its great length of time under combustion is remarkable. Although it is not fitted for forge purposes (without previous coking) it is well adapted for common fuel and steam purposes. There is a vast hody of such coal, heing from two to six feet thick, extending in a horizontal layer for miles. Eratic blocks of a superior kind to the first-mentioned layer, have beeu found among the gravel at the margin of the river, at low water, which have probably been washed out of some of the deep holes in the hed of the river. This class of coal is similar to Australian "kerosene coal," and is readily inflammable; but after the flame subsides, a white sparkling heat is imparted to iron in the forge. There is sufficient coal strata already discovered to warrant the assurance of an extensive and valuable coal field in this locality, which only requires capital and enterprise for further development.

OLD SIERRA.

USE OF VINEGAR IN COOKING MEATS.—All kinds of poultry and meat can be much quicker cooked hy addiug to the water in which they are hoiled, ahout one-eighth part vinegar. By the use of this, there will be a considerahle saving of fuel and shortening of time. Its action is very beneficial on old, tough meats, renderiug them quite tender and easy to be digested. Tainted meats and fowls will also lose their bad taste and odor, if cooked in this way, and if no more vinegar is added than we havo indicated, there will he uo taste of vinegar acquired.

Overland Railroad—Notes of Travel.

From our Traveling Correspondent.

EDITORS PRESS:—It was a common remark amoug the passengers who camc overland with us, that they had enjoyed the jonrney very much. Every one seemed delighted, and not a word of fault was found with the road or the officials. I douht if a finer pleasure ride hy rail can be taken than the one over the Sierras. The change of climate from the heat of summer to the region of snow, the grandness of the mountain scenery, especially at Cape Horn, and that heautiful view of Donner Lake, just as we emerge from the tunnel, call forth feelings of romance, and we eeem to be passing through an enchanted couutry.

As we skirted close along the Truckee, we could not help thinking what a fine water privilege was running to waste. The etream is large, the descent rapid, and fed as it is by the snow of the mountains, it must be continuous.

We soon reach the region of alkali. The country is level, or nearly so, and the white alkali makes its appearance on the surface in such quantities that it might be collected with profit. If a few cisterns were allowed to fill during the rainy season, with a saturated eolution of the alkali, I presume it would so evaporate during the summer seasou that itwould crystallize out.

Just hefore reaching the station named Palisade, in the region of the Humboldt, we passed a genuine palisade, whose columnar structure reminds one very much of the Giant's Causeway. As we journeyed on we saw signs of alkali almost everywhere, and just at night at the end of the second day, we passed within sight of Salt Lake. At Promontory we changed cars and settled ourselves as comfortahly as we could in a crowded car. The scenery through Echo and Weher cañons is said to he very fine, but as we passed through them in the night, we lost it all. The last portion of the Central and the first of the Union roads we found rather rough, hut not bad. They will soon be made as smooth as any roads in the Union.

An abundance of coal is found along the Union road; first at Echo, ninety miles from Promontory, and from this point on the Carson, a distance of 350 miles. This was a most interesting portion of the ride. Sometines for a distance of twenty miles we could see bluffs, apparently composed of grit, while at their foot coal is fonnd in quite thick seams; a single stratum of the rock could be traced for miles. So abundant is the coal and so easily worked that at one point it is furnished to the railroad company for $3.75 to $4 (currency). The coal is reached through a tunnel, and ie of good quality. These mincs furnish all the coal that is used on this road, and I have no doubt but they will supply the Central after a little. All along this road, also, we saw indications of alkali. The water, however, is used in the boilers of the locomotive, the incrustation being prevented by frequent blowing off, so as to entirely empty the boiler.

You will ask about the Rocky Mountains. I can only answer that, aside from the steep grade through Echo and Weber cañons and a few enow covered peaks to the south of us, we saw nothing of them. We entered upon a hroad plateau which continued all the way to Omaha. When we reached the vicinity of the Platte we found the soil much better; in fact I may say that from this point, all the way into Omaha, it is as fine a country as I ever saw. Omaha, it seems to me, has heen over praised; for I expected too much. Council Bluffs seemed to me to he tho finer town, and I should not be surprised if it was the larger of the two. W. B. R.

COMPASS FREAKS.—A Duluth (Minnesota) paper says: The Assistant Surveyor in charge of the transit on our Towu Site Survey during the past week, at a certain spot, noticed in a distance of fifty feet a change from 11 deg. east, to 17 deg. cast; then in a hundred feet further, hack to 12 deg. east; while five hundred feet further on from 12 degs. 30 min. east it whirled arouud to 30 degs. west (!) and kept at that for three hundred fect, and then got back again to 11 degs. cast. The Surveyor picked up a piece of rock of the species which seem to prevail in that locality, and applied it uear his compass, whon the needle followed it around as it would a true loadstone.

ELY DISTRICT, LINCOLN COUNTY, NEVADA.—A correspondent writes as follows from this District, which is situated about 125 miles cast of White Pine:—"The Meadow Valley company, lately incorporated in San Francisco, is doing a prosperous husiness on their Pioche lode, which is nearly sixteen feet wide, carrying a large amount of argentiferous galena, of great richness, averaging $200 a ton. Many other parties here own good and well defined ledges, equally rich. There are three independent works for reducing the ores, hesides those of that company. The country comprising this district is very favorahle for mining enterprises. The climate is mild even in winter, snow rarely falling over eight inches deep, and even that soon melts. Grass and wood about the miues are plenty, and provisions, which mostly come from the Mormons, are cheap. Flour is ten dollars, currency, beef ten cents, etc. Should parties ever bring mills into this country they will have milling ore of the very best kind to deal with, (Steinberyite) worth from fifty to two hundred dollars per ton. There are ledges of it over ninety feet thick, all paying, within two miles of water (springs) for their mills, with level country all the way from the mines to the water. The ledges are situated in rolling hills, easy of access; either in mica slate or in trap limestone. Should the right kind of impetus ever he giveu to the country, it will beat White Pine. There is ore here that goes as high as ten thousand dollars to the ton, none less than fifty. VERDAD.

THE LOON CREEK DIGGINGS.—A very active excitement has raged throughout this basin, and in Alturas and Adda counties as well, during the past week, and hnndreds of miners and others have etarted for the new gold fields. Loon Creek is a tributary of the south fork of Salmon River, and the diggings are 120 miles east of north from this city. The gold is worth $17 per ounce. Never since the early days of Boise Basin has there heen such a rush. If the gold fields prove anything near as good as expected, the camp will be among the best in Idaho within a year. Another account says: "The diggings are all river claims, and worked by help of wing-dams. The limit of each claim is 200 feet up and down the river and across. So far the claims have paid from $4 to $12 per day to the hand, but no big strikes have heen made. Cody & Burnett, Steve Stemmons, aud others from this vicinity, and a good many more from Placerville and other basin campe—fully 100 in all—have located claims along the river, to a distance of 12 miles, and all seem to have done well."—*Idaho World.*

JAPANESE MATCHES.—Mr. R. Trevor Clarke has stated that the Japanese matches are identical with the epur-fire of the Chinese. He gives the following form for making this beautiful little firework:—Lampblack 5, sulphur 11, gunpowder from 26 to 30 parts, this last proportion varying with the quality of the powder. Grind very fine, and make the material into a paste with alcohol; form it into dice, with a knife or spatula, about a quarter of an inch square; let them dry rather gradually on a warm mantelpiece, not too near a fire. When dry, fix one of the little squares in a small cleft made at the end of a lavender etalk, or, what is better, the solid etraw-like material of which housemaide' carpet-brooms are made (panicular stems of *Arundo Donax*). Light the material at a candle, hold the stem downwards, and await the result. After the first hlazing off, a ball of molten lava will form, from which the curious cornscations will soon appear.—*Chemical News.*

FISH SCALES AS ORNAMENTS.—Fish ecales, snch as those from the carp or salmon, can be made useful as ornaments in fancy dressing and paper work, by first well washing them in warm water, then in salt and water, and well drying them between blotting paper. Wherever the scales would be appropriate, as in a landscape where there is water, or for windows in the sketch of a church or old castle, or for moonlight, or fading sunlight, they may be fixed with gum, and afterwards shaded with a spirit varnish of green or rose color. The hrilliancy of the pearl scales will reflect through the trausparent color applied.

ELECTRO-CHEMICAL DESILVERIZATION.—We hear that M. Becquerol has been experimenting on a new electro-chemical process by which silver can he extracted from its ore without tho tedious and costly practice of amalgamation. He makes nso of a powerful battery with donble liquid elements, separated by porous diaphragms. A trial of tho system in California is meditated.—*Exchange.*

Mechanical Progress.

A New Steam Indicator.

Engineering for July 30th describes and illustrates an ingenious steam power meter recently invented by Messrs. Ashton and Storey, of Manchester, Eng. The upright rod of the indicator piston has upon it a light wheel, which revolves horizontally, against which is gently pressed, by a spring, a wheel which revolves vertically, and upon whose shaft is another and similar wheel having a grooved periphery, in which runs a cord connected with the cross-head of the engine. This cord causes both vertical wheels to rotate when the pisisnot moving in one direction; and when it is moving in the other they are made to rotate in the opposite direction by a spring. The horizontal wheel first mentioned is placed at such a height on the piston rod of the indicator, that when there is an equal pressure at the two ends of the indicator cylinder, and the piston thereof consequently in equilibrium, the horizontal wheel comes exactly against the center of the face of the vertical wheel, and therefore does not revolve; but when it is raised or lowered by motion of the piston rod in either direction, it does revolve, and with a rapidity greater in proportion as it moves in either direction from the center towards the periphery of the vertical wheel. Moreover, as the vertical wheel is reciprocating in its motion, the said horizontal wheel revolves only in one direction. Being furnished with a long pinion, in which runs a spur-wheel connected with a dial and suitable mechanism above, the number of foot-pounds exerted by the engine for every circular inch of piston is pointed out by an index upon the dial.

This indicator can be used for ascertaining the relative amount of work done during the up and down strokes of the engine. The journal referred to, in a separate editorial article upon the subject of steam power meters, remarks that this ingenious apparatus is the only one which satisfactorily fulfills the end of an indicator; and adds:

"We believe that this instrument will be found to render material aid in estimating the economical value of different engines under various circumstances, and it will at once show whether any unusual expenditure of fuel is due to increased work thrown upon the engine, or to carelessness upon the part of the attendants. It will also enable the user of the steam engine to ascertain by mere inspection of the dial the power required to drive different machines, or the efficiency of different lubricators, and it will furnish a variety of similar information, the value of which will be fully recognized by those who have hitherto only been able to obtain it by a considerable expenditure of time and trouble."

American Iron Rails.—The Chicago and Milwaukie rolling mill expects to turn out yearly 20,000 tons of rails equal to those of Bessemer steel as regards the first use, and preferable to them in the fact that they are re-rollable,—which the Bessemer are not. The upper layer of these rails will be hard, being made of one-fourth Lake Superior iron and three-fourths iron from the "Swedes" mine. The lower layer, on the other hand, will be tough and flexible, being made of one-fourth Swedes iron and three-fourths Lake Superior.

Strength of Plates as Diameter of Boiler.—The following is from an article by W. M. Henderson in *Journal Frank. Institute*: A cylinder boiler will be, estimately, just twice as strong, in the longitudinel direction, as in the curvilinear, from a mathematical principle involved in the construction of all cyliadrical vessels, *i. e.*, "the areas of circles are to each other as the squares of their diameters"; the material offering resistance to rupture in the longitudinal direction being the area of the rim section of the shell, as against the pressure exerted on the area of the boiler head. In the curvilinear direction, it is the area of the longitudinal section of the plates, passing through the axis of the boiler, as against the pressure exerted on the area of the enclosed section. From this, it will be seen that boilers having increased dimensions should also have increased strength in the ratio of their diameters, *i. e.*, one boiler twice the diameter of another should have double the thickness of plates, having to resist double the pressure in the curvilinear direction, and the heads being increased in the proportion of four to one, quadruple the pressure in the longitudinal direction."

Effect of an Explosion in Proportion to its Suddenness.—"The startling effects of certain explosions depend on the *shortness of time* required for the action to take place. Chemical calculation show that, for a given result, the expansion produced by the explosion of nitro-glycerine, Giant power, and other fulminates, is no larger than that produced by gunpowder. It is the suddenness of the combustion in the case of these explosives which bursts the gun, the ball not having time to advance a single inch. Compared with this, the burning of gunpowder is a slow process. In the same manner are explained, moreover, the effects of a blow or concussion produced when a heavy body, moving with great velocity, meets with an obstruction. If the obstruction gives way gradually, time is consumed and little effect produced; but if the obstruction is unyielding, so as to stop the motion in a very short space of time, the force of a number of foot-pounds is concentrated in that very short space of time; it thus becomes equivalent to a very great amount of power."—*Dr. Van der Weyde.*

Gun Cotton in Dentistry.—The *Druggists' Circular* says that the collodion made from gun-cotton hardened by evaporation into thin sheets, has been used as a substitute for the objectionable vulcanized rubber. For this purpose different sheets are softened by ether and pressed together in the mold.

One of the objections to the vulcanized rubber is the dark color, which can only be corrected by vermilion, which, however, being a compound of mercury, seriously affects the health of some persons. Sets of teeth made on collodion are much lighter and stronger than on any other material thus far employed for that purpose.

The "Speed-ring" for Small Pulleys. "Belting Facts and Figures," by J. H. Cooper, gives this item:—"In order to obtain a high speed from a driving belt, without the usual arrangement of counter-shaft and belt-pulleys between the main driving shaft and the machine to be driven, and without the disadvantage of passing the belt over a small pulley, a small grooved pulley is keyed on the shaft to which the high velocity is to be communicated, and upon it is placed a loose, inflexible ring, of two or three times the diameter of the pulley, grooved internally to fit it, and turned up smoothly on the outside to receive the driving belt. The belt gives motion to the speed-ring, the inner grooved surface of which communicates a higher speed to the pulley. The speed-ring is held in effective driving contact simply by the tension of the belt. For obtaining increased lateral steadiness at high speed, a double speed-ring may be used, if required. By these arrangements a belt may be passed over a speed-ring of 16 inches diameter and yet communicate the same speed to the shaft as if it were passed over a pulley of only 4 inches diameter."

Method for Increasing the Flow of Wells.—M. Donnet, an engineer of Lyons, proposes to increase the flow of wells by closing the mouth as perfectly as possible, by means of a sheet-iron bell, through the top of which the tube passes which is attached to the pump. When the pump is worked, if more water is withdrawn from the well than naturally flows into it, the water level is lowered, and a diminution of pressure is produced on the surface; this causes an increased supply of water to come in from the springs which feed the well. Indeed, since this increased flow enlarges the channels of supply, the total delivery of the well is permanently increased.

New Method of Suspending a Ship's Compass.—The Earl of Caithness has invented a ball-and-socket arrangement to take the place of the gimbals heretofore generally used. It is said to answer the purpose admirably, and to keep the needle level in the roughest weather.

Scientific Progress.

The Preservation of Entomological Cabinets.

In the August number of the *American Naturalist* Prof. J. L. Leconte gives valuable hints upon this subject, which we condense:—"For the preservation of insects, corrosive sublimate and various preparations of arsenic have been recommended by several high authorities. The former will finally render the pin brittle by the amalgam developed; the latter, when used in a very weak alcoholic solution so as to leave no efflorescence will preserve them well, but is troublesome to apply, as the insects must be thoroughly soaked. Binarseniate of potassa suggested itself; I prepared three boxes of specimens with it. They had a good appearance for some time, but eventually a considerable efflorescence came on the surface. Painting the interior of the boxes with arsenious acid was only partially successful. I then tried the vegetable alkeloids. I soaked specimens in moderately strong alcoholic solutions of strychnia and picrotoxia, dried them and put them into pill boxes with *Trogoderma* larvæ. After some weeks the specimens were partly eaten. The effects of benzine and carbolic acid are only temporary. Packing the collections in chests painted with coal tar, renders the collection practically useless for study on account of the difficulty of access to the boxes.

Surgical art has given us an instrument by which a poisonous liquid can be rapidly and effectively applied to the specimens as they stand in the cabinet boxes. I refer to the *Atomizer*. Opinions may vary as to the poison to be used, but I have found the following formula satisfactory; it produces no efflorescence, even on the most highly polished species, while the odor is quite strong, and persistent enough to destroy any larvæ or eggs that may be in the box:—Saturated alcoholic solution of arsenious acid, eight fluid ounces; strychnine, twelve grains; crystallized carbolic acid, one drachm; mineral naphtha (or heavy benzine), 10 or 12 fluid ounces, and strong alcohol enough to make one quart. Care should be taken to test the naptha on a piece of paper. If it leaves a greasy stain which does not disappear after a few hours, it is not suitable for this purpose."

New Pigments.—Seeo has patented in France divers new pigments based upon his white one of *tungstate of baryta*. The *stannous* tungstate is indigo blue; *ferric* tungstate chamois; *cobaltous* tungstate violet, and blue when calcined; *chromic* tungstate deep green, and *nickelous* tungstate bright green. He claims that these colors are all very stable and present remarkable lustre. Prof. Wurtz, in mentioning this, remarks upon a fine orange pigment prepared by himself some time since, which is a *uranate of baryta*. It is made by boiling carbonate of baryta in a small excess of a solution of the nitrate of uranic oxide. The product is lemon-yellow and has a fair body, but acquires its brilliant orange tint and high body by applying an extremely careful and gentle heat to it in a porcelain crucible, stirring with a glass rod. A trace of organic matter will turn it greenish at this stage, by reduction, and ruin it.

Detection of Alcohol in Small Quantity.—The liquid to be tested is mixed with a portion of platinum-black in a small flask, heated to 124° F., agitated well, and filtered. A few drops of liq. potassæ are added to the filtrate, which is evaporated to dryness over a water-bath. The residue is then mixed with a little arsenious acid, and submitted to heat. If alcohol is present, cacodyl is produced, recognizable by its garlic odor. It is suggested by M. Nickles that propylic alcohol will also yield cacodylic products by this process.—*Jour. de Pharm.*

Guyot's Battery.—M. Guyot has invented a battery, which consists of a porous earthen vessel filled with finely-powdered iron ore, in which is plunged a cylinder of gas-retort charcoal, and an ordinary vessel filled with a saturated solution of common salt, in which is placed a strip of zinc. For the solution may be substituted sand impregnated with it, or salt in crystals.

The Heat Carried by the Gulf Stream.—M. James Croll speculates thus: "The total quantity of water conveyed by the stream is probably equal to that of a stream 50 miles broad and 1000 feet deep, flowing at the rate of four miles an hour. And the mean temperature of the entire mass of moving waters is not under 65° at the moment it leaves the Gulf. I think we are warranted in concluding that the Gulf Stream, before it returns from its northern journey, is on an average cooled down to at least 40°; consequently it losses 25° of heat. Every cubic foot of water, therefore, in this case carries from the tropics for distribution upwards of 1500 units of heat, or 1,158,000 foot-pounds. According to the above estimate of the size and velocity of the stream, 5,575,680,000 cubic feet of water are conveyed from the Gulf per hour, or 133,816,320,000,000 cubic feet daily. Consequently, the total quantity of heat transferred from the equatorial regions per day by the stream amounts to 154,959,300,000,000,000,000 foot-pounds.

Action of Sodium Amalgam on Metallic Salts.—An aqueous solution of ferric chloride, acidulated with hydrochloric acid, when treated with sodium amalgam becomes clearer and clearer, and at last colorless, the whole of the iron being reduced. M. Bunge believes that the reduction of ferric to ferrous chloride, and of the latter to metallic iron proceeds simultaneously.

Chromic chloride, mercuric and gold chlorides, and the chloride, iodide, and bromide of silver, are similarly reduced. In the case of the mercuric chloride calomel is first produced. This reaction may be usefully employed in analysis of the haloid compounds of silver, instead of fusing these compounds off with an alkaline carbonate. It is only necessary to place a small quantity of the powder in a test-glass with a little water, and add thereto some pieces of sodium amalgam, and the chlorine, iodine, or bromine may be detected in the solution in the ordinary way.—*Chem. Centralblatt.*

Freezing by Means of Saline Solutions.—The greater the quantity of any salt which water takes up at a certain given temperature, the greater the decrease of temperature procurable, by means of the solution of that salt. The moment of saturation is the moment of greatest cold. When, therefore, the salt and the water are applied in the proportion wherefrom a saturated solution results, a long period of time elapses before the last portions of the salt are entirely dissolved, and the effect of the warm ambient air to some extent vitiates the proper results of the experiments; the saturated solution should therefore be obtained as rapidly as possible. The sulphocyanide of potassium is the best salt to be adopted for the artificial production of ice; when 500 grammes of this salt are dissolved in 400 cubic centimeters of water, and the mixture stirred with a test-tube filled with water, the latter will be frozen in from two to three minutes.—*Chem. News.*

New Crystalline form of Silica.—De Rath has found in a volcanic porphyry from Cerro San Cristobal, Mexico, a mineral he calls *tridymite*, which is pure silica of the density of what has heretofore been regarded as "amorphous" silica, 2.3; the density of ordinary quartz being 2.6. Tridymite, like quartz itself, is hexagonal, but occurs in very beautiful macles.—*Poggendorf's Annalen.*

In reference to the above, Prof. Wurtz says:—This is a new fact looking to the probable banishment from chemical language of the term amorphous; at least with the sense usually attached to it. The tendency is towards the identification of the condition of solidity with the action of crystallizing forces. Even the colloid and viscoid consistencies or conditions appear to be but transition or medium states between liquidity and solidity."

The Setting of Hydraulic Cements. M. Frémy has shown that when an argillaceous limestone is calcined, at a dull red heat, a partial decomposition of the clay takes place; the silica and alumina, in fact, are separated, and are made free to combine with the lime when the cement is mixed. If the free lime be dissolved out by weak acid, or water, or syrup, the residue of silica and alumina will not set under water, but the cement may be reproduced by the subsequent admission of some lime.

Farming and Gardening.

Varieties in Grain—Interesting if not Novel Deductions.

It is now a very generally acknowledged fact that all cereals are hut cultivated grasses—tbat tbey were not created as wheat, corn, oats, or barley; but that each one has been improved to its present standard of perfection, from a wild and almost worthless grass. There is even now growing on the French and Italian shores of the Mediterranean a neglected wild grass—*Ægilops ovata*, the grains of which, when transplanted to a carefully cultivated garden, will, in a few years, develop into a very excellent wheat. From similar plants, now unknown, have come our barley, corn, etc.

All the different *varieties* of each cereal, no doubt came from a single original stock. None of the cereals will mix, so as to form a new and permanent *species*. Experiment has proven that a sharp limit is fixed to the variation of species. Such variation is powerless to *perpetuate* new organs, even should such, in nature's sports, appear. The idea of species as distinct from *variety*, in both the animal and vegetable kingdom, is based on the faculty of continued reproduction.

The horse is a species comprising many varieties, any two of which, by sexual union, may propagate and produce new varieties, which in turn may propagate. The ass is another species, with similar characteristics. Union between the horse and ase will produce a hybrid; but with that production nature has fixed a limit—an effectual bar against further variation. The mule cannot reproduce itself.

So it is in the vegetable kingdom; we may produce a hybrid by mixing either of the different *species* of grain, as wheat with barley, etc.; but we have only a hybrid, and fail in any attempt to obtain therefrom a new species. Varieties of the same species, however, may be multiplied indefinitely, by various modifications of culture, crossing, etc.

A New and Novel Mode of Producing Varieties.

Tbere is reason to believe that varieties are also sometimes produced by peculiar influences brougbt to bear upon the seeds of various plants. We have "wild goose wheat;" "wild goose rye;" "wild goose plums," etc., so called becanse the seed from which those grains were first produced were taken from the crops of wild geese, and it is inferred that these migrating birds must have obtained such seed in some distant and perhaps unknown locality. We have paid some little attention to this matter, and have come to the conclueion that tbere is nothing in the nature of such cases which would militate against the assumption that such seeds might have been picked up by the birds upon the very farms where tbey have been killed, and even from a portion of the previous year's crop. The change which has produced a "new variety" has been wrought upon the seed, while in the crop of the bird—how, we cannot tell. The seed of the "surprise oat," of which we gave some account a few weeks since, and which was found only upon a single spire, growiug in a large field of common oats ou a farm in Illinois, was no doubt originated in some similar manner—not necessarily in the crop of a goose or any other bird; but the seed from which it grew might have fallen upon some suhstance, organic or otherwise, which produced the modification upon the germ, that finally culminated iu a new variety of oat, which has become famous iu the minds of many for its alleged superiority of excellence.

Again, varieties may he improved, as regards their flavor, size, etc. Bearing upon this, we give the following paragraph which we clip from a late number of the Massachusetts *Plowman*, in wbich paper it appeared editorially:

Seeds Buried in Manure.—Last winter we saved a portion of the seeds of a fine marrow squash for this season's planting, cleaning them thoroughly after the usual method. The remainder of the seeds were thrown into the vault, where they were expected to rot, as well behaved seeds should, under such circumstances, and help in this spring's fertilizing. The material from this vault was composted with loam and applied to a few hills in which were planted early sweet corn, and the seeds of the above-named squashes; they, with most of the seeds which remained in the vault all winter, sprouted, and at the time of this writing, the plants from the last mentioned seeds are most luxuriantly foliaged, having four or five large leaves, while tbe others have but two or at most three.

We regard the above as a very interesting fact in connection with our assumption of a new and hitherto but little observed method of producing new varieties. It is in some degree parallel with the modifications supposed in the crops of birds. May there not be here a new field opened for agricultural experimeut? Who knows what important modification of already valuable products may he brought about by the steeping of the seed, for instance, before planting, in different mineral solutions of a character akin to the soil in which each respectively is found to thrive most luxuriantly.

A New Squash.

A new variety of squasb, known as the "Lungreu squash," was introduced to the Boston public in the spring of 1868, by Messrs. Washburn & Co. of that city, a sample of the seed having been sent to that firm by Dr. Lungren, of Volusia, Florida. Little or nothing appears to be known of its origin. *Tilton's Journal of Horticulture*, for August, gives a very neat pictorial representation of this new vegetable, with the following description:

Planted in good soil, the vine grows vigorously, and attains a length of fifteen feet and upwards. The leaves, which are large and on long foot stalks, are peculiarly, and often even beautifully, variegated with orange or bright yellow; the color being distributed from the base of the leaf, around which it is usually most profuse, in irregular, scrrated bands or stripes, towards the borders.

The fruit is bottle-formed [pear-formed we should judge from the engraving], almost pure white, ten or twelve inches in length, eight inches in diameter at the broadest part, and weighs on the average eight or ten pounds. The neck is quite solid, and four or five inches in thickness. The stem is short and fleshy, and measures nearly the same in diameter as in length. The flesh is pale yellow, or yellowish-white, firm, dry and sweet, mild and pleasant, with little of the strong, unpleasant flavor common to many varieties. The seeds, in size, form and color, appear to be intermediate between those of the Hubbard or autumnal marrow and the winter crook-neck.

The variety is evidently allied to the Puritan, and would unquestionably intermix if cultivated in its vicinity: for it may be worthy of notice that the fruit of the Puritan is occasionally found scarcely distinguishable in size, form, color, or even in quality, from the Lungren, though the plant is never seen with the variegations peculiar to the last named. This plant is fit for use as soon as it attains suitable size, and the plants yield as abundantly as the autumnal marrow or Hubbard varieties. With ordinary care the fruit will keep till midwinter.

Our California gardeners will do well to look after this new vegetable.

San Joaquin Valley.—The farmers in the new settlements of the San Joaquin Valley are said to be doing remarkably well. They are generally in high spirits over present success and hope of future prosperity. From Moore's Landing to San Joaquin City the yield of wheat, it is reported, will average forty bushels to the acre, where the ground has been properly cultivated. In whatever direction one turns in that region he finds the farmers busily engaged in harvesting and thrashing out their grain.

Drying Hay by Steam.

Steam has long been employed in every department of hay culture, from plowing and preparing the soil to making it up and even hauling it to the barn or a market; but it is only recently that we have heard of drying bay by steam. This experiment, it is said, has been tried in England, and so successfully as to leave nothing better to be desired. The grass is carried from the field as fast as mown, and subjected to a blast of hot air by the action of a large fan, worked either by steam or horse-power. The hot air is generated by a coke furnace, and is simply drawn outward by the revolving fan, instead of being allowed to pass up the chimney. In about ten minutes the moist grass is converted into bay of the very best quality. If this invention proves practical, the effect will be to render the farmer independent of the weather, so far as haying is concerned, and consequently save the enormous loss which now results from inferior and damaged hay. It may also he employed to secure a second crop, which at present is generally overlooked, because of the uncertainty of being able to have enough sun to properly dry it.

Californians are not often troubled either by rains or lack of sun to properly dry their hay; but a large portion of hay made here is more or less injured by overdrying. By employing steam as above, the process of hay-making may be brought so directly under the control of the farmer that the exact quantity of heat required can he easily secured; while the "burning" of the hay, and the consequent loss of aroma and engar, is entirely avoided. It is well known that hay cured in the shade is much better than that cured in the hot sun. Steam drying will secure all the advantages of the former process.

Raisins Made upon the Vines.—In the south of Europe and in Egypt, grapes are allowed to dry and ripe upon the vine so as to form raisins. The sweet fleshy grapes which grow upon the sunny, sheltered slopes of hills are preferred. When the fruit is ripe the grapes are thinned; and the vine is stripped of its leaves. The sun then completes the saccharification, and drives off the superfluous water. When the bunches are plucked, they are cleaned, dipped for a few seconds in boiling lye of wood ashes and quicklime; the wrinkled fruit is then drained and dried, and exposed to the sun upon hurdles for fourteen or fifteen days. The finest sun raisins are the plumpest bunches left to ripen upon the vine after their stalks have been cut half through. An inferior kind of raisins is prepared by drying in an oven.

Sherman Island.—Reports from this recently reclaimed island still continue favorable. All kinds of vegetables are growing wonderfully. The soil looks dry upon the top; but the roots readily go down to everlasting moisture. It is suggested that this locality is most admirably calculated for the dairy business, as the grass keeps green the year round. San Franciscans would doubtless readily patronize such an establishment, as good grass-fed milk is infinitely better than slop-milk or that produced from brewer's grain. A steamer will soon be needed for the accommodation of the business with this island. The George Roberts Company has sent East for a steam ditcher, which, it is said, will greatly reduce the expense of reclaiming their island.

Raising Gold Fish.—These fish are extensively raised in many places at the East, and persons who are engaged in that business are often annoyed because they do not increase as rapidly as desired. It sometimes happens that the ponds are almost if not quite depopulated. This is said to be very frequently owing to the ponds being infested with leeches, which are very destructive to this fish. To obviate this difficulty it is recommended that the ponds should he run dry, all the mud and decayed vegetable matter carefully removed, and the bottom and sides of the pond lined with a good covering of pebbles or coarse, clean gravel.

Great Loss of Cattle.—The San Diego *Union* states that out of 55,000 head of cattle that started from Texas during the past year for California, not over 5,000 reached the State.

Interesting Fact in Tree-Growing.—It often occurs that a graft is put into a stock which does not grow as rapidly as the graft. The consequence is an unsightly bulge or swelling at the junction of the graft. Charles Downing states as a remarkable fact, that be once witnessed the removal of such a protuberance in the following manner. The graft was a Buerre pear, which had largely outgrown in thickness its stock. The smaller portion was enclosed in straw about two inches thick, and at the end of two seasons it was found on removing the straw, that the contracted, or hitherfore smaller stem had swollen to tbe full size of the graft above, presenting but a slight indication of the point of union between graft and stock.

Tbe device, we believe, is not entirely new, although not very generally known. The item will at all events be of interest to many who have trees with contracted stems, that give evidence of some natural want of affinity with the graft. Moss has been used as a material for wrapping, and is probably better than straw.

Grapes without Irrigation.—Mr. H. L. Hatch, at Indian Springs, Nevada county, has a vineyard of 1,200 vines—foreign and domestic varieties—which, now in their third year of growth, are loaded down with fruit, and yet have never been irrigated. Mr. Hatch started out with the determination to show that the grape can he cultivated in the foot-hills without irrigation.

Driving a Young Horse.—In teaching a young horse to drive well do not hurry to see how fast he can trot. Keep each pace clear and distinct from the other, that is, in walking make him walk and do not allow him to trot. While trotting, he equally careful that he keeps steady at his pace, and do not allow him to slack into a walk. The reins while driving should be kept snug; and when pushed to the top of his speed keep him well in hand that be may learn to bear well upon the hit, so that when going at a high rate of speed be can he held at his pace, but do not allow him to pull too hard, for it is not only unpleasant, but makes it often difficult to manage him.

Corn for Cows.—A correspondent of the Canada *Farmer* who sold the milk from twenty-six cows to a cheese factory last year, commenced feeding corn on the last of July from an acre planted in drills. In September he omitted the corn for four days, and the result was a diminution of fifty-two pounds of milk a day. The corn feeding was again resumed, and in four days the cows gave their customary quantity of milk.

The Pecan Nut, which is extensively cultivated in the Southern and Southwestern States, will not bear fruit when planted north of Maryland, although it flourishes as a shade tree as far north as Central New York. There is said to be a beautiful tree of this variety growing in a garden at Newburg, N, Y., but it has never produced a nut.

Steam Plows.—In the proceedings of tbe New York Agricultural Society, it is stated that there are now three thousand steam plows in use in Great Britain on the Fowler plan, and four hundred in Egypt, on the level plains near the Nile. Our farmers will see from this what changes are taking place in the mode of farming in the old country.

The Eastern Shipment of Fruit promise to give quite a new impulse to the general fruit business of the State. The success attending the preliminary experiments of this season are most promising for the future of that industry, and will result in a rapid increase in the number of our fruit trees and the extent of our orchards, particularly along the line of the overland Railroad.

Santa Barbara—The Wool Clip.—It is said that the wool clip of this county will reach 1,200,000 pounds, worth at the current price $240,000. The total wool crop of the State last year was 14,802,000 pounds—7,400 tons, and nearly 1,000 tons more than the product of any other State in the Union.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, August 28, 1869.

Financial.

A very remarkable change has come over our local money market since our last issue. The Treasury Department, in response to the request of our bankers, has permitted the transfers of gold from the Sub-Treasury in this city, against gold deposits in New York, to the amount of several millions, affording much relief to the mercantile community and enabling grain dealers to move the heavy crop awaiting a market. We also learn that the Directors of the London and San Francisco Bank have determined to increase its capital to $3,500,000, an addition of $2,500,000, which will prove of material aid to various interests. Telegrams received from New York state that $1,500,000 had left that city for San Francisco, overland, and as this is the amount required for immediate use by the London and San Francisco Bank, it is probable that the telegram refers to it and not to the transfers authorized by the Treasury. We have been long surprised at the sluggishness of British capital to seek investment in California securities. The telegraph, cable, and railroad have brought us so near to each other that London and San Francisco are as close neighbors as London and Edinburgh were thirty years ago. This is a new State, with undeveloped resources of the most varied, extensive, and valuable character. It presents inducements not surpassed by any other on the globe; our interest rates are three or four times higher than those of England; our currency is gold and silver, and our future commercial, agricultural, mining, and manufacturing greatness unquestionable. The banks of France and England now hold $350,000,000 of specie lying idle and rusting for want of use. The interest on this amount at English and Continental rates—three per cent. per annum—would be $10,500,000, and at ten per cent., the lowest California rate, would be $35,000,000. Loans are made on European securities of far inferior character to those proffered by the Pacific Coast of the United States, and it is most gratifying to know that the manner in which British capital has been handled by its accredited managers in this country has resulted in developing increased confidence in California investments. The ice of English indisposition has been fairly broken and a regular thaw is likely to succeed, opening fresh springs full of nourishment to all interests.

The deposits in our savings banks are regular and increasing in volume, demonstrating the easy financial condition of our laboring classes and the liberal remuneration paid for their services. Nearly $24,000,000, gold, is booked in our local savings banks to the credit of about 40,000 depositors of that class. In this manner the little drillets of industry are collected in one mighty stream, which is applied to turning the colossal wheels of business enterprise and the development of our many valuable resources. But for these banks, $24,000,000 would now be either withheld from use or so subdivided as to be of scarcely any benefit to the community, while the owners would be receiving little or no benefit from their savings. As it is, the amount of $2,880,000 per annum is now shared among them in the shape of interest paid by borrowers. Although money is more plentiful and the stress has been removed, probably never to be renewed from like causes, rates in bank have not been diminished, and are quotable at 1@1½ per cent. per month. Bullion is in short supply with a rather active, but not pressing demand. Gold bars range from 850@860; silver bars from par to ½ per cent. discount; currency bills on. Atlantic cities pay 31@32 per cent. premium on gold; coin drafts, payable at sight, are negotiated at ⅜@1 per cent. premium; telegraphic transfers, 1@1¼ per cent. premium; sterling exchange, 483¼d; commercial exchange, 49¼@49½d; Mexican dollars, 6@7 per cent. premium, nominal; gold, in New York, August 26th, 133½; legal tenders, in San Francisco, 74½@75.

City Stocks.

During the past week we note sales of Spring Valley Water Co. stock at $60 50 per share, and Central (street) Railroad at $56. A few shares of California Steam Nav. Co. were sold at 52@53 per cent.—The North Beach and Mission Railroad Co. elected the following Directors for the ensuing year: J. T. Boyd, E. F. Northam, Henry A. Lyons, John S. Hager, Michael Reese, Jerome Lincoln, Alpheus Bull, and Michael Skelly.—At the close, San Francisco Gas realized $84@84 50 per share.

The returns of our local insurance companies to the Internal Revenue Department for the month of July and previously this year have been as follows, upon a currency basis of 74 cents on the dollar for the month of January, 77¾ cents for February and March, 75½ cents for April, 73¾ cents for May, 74½ cents for June and July:

	July.	Previously this year.	Total.
Pacific	$124,606	$616,281	$741,217
Union	39,809	257,982	297,791
Fireman's Fund	37,804	199,556	237,360
California	9,092	61,889	71,581
Merchants' Mutual Marine	20,874	158,766	179,640
Occidental	26,787	136,012	162,799
Home Mutual	15,985	82,250	98,235
Peoples'	24,381	97,951	122,332
Total	$300,268	$1,610,687	$1,910,955
Same time in 1868	198,393	993,655	1,192,048
Increase in 1869	$101,875	$617,032	$718,907

The above statement shows an increase of $10,786 over the receipts in June. The receipts of the several companies in July as compared with June show the following difference:

	Increase.	Decrease.
Pacific	$1,312	.....
Union	7,585	.....
Fireman's Fund	1,643	.....
California	462	.....
Merchants' Mutual Marine	.....	6,388
Occidental	1,582	.....
Home Mutual	532	.....
People's	4,026	.....

The receipts of the city railroads for the month of July and previously this year were as follows:

	July.	Previously this year.	Total.
Omnibus	$26,130	$145,939	$172,069
North Beach & Mission	26,011	140,313	166,324
Central	18,906	96,980	115,886
Front Street, Mission & Ocean	10,727	54,201	65,028
Market Street	12,562	69,977	82,539
Potrero and Bay View	3,745	17,629	21,374
City	3,308	.....	3,308
Totals	$101,409	$525,220	$626,729
Same time in 1868	92,418	445,775	538,193
Increase in 1869	$8,991	$59,545	$88,536

As compared with the total receipts in June, we find an increase of $9,754. The receipts of July as against June show the following difference:

	Increase.	Decrease.
Omnibus	$ 572	.....
North Beach and Mission	2,520	.....
Central	1,813	.....
Front Street, Mission and Ocean	1,112	.....
Market Street	386	.....
Potrero and Bay View	43	.....

Mining Share Market.

Moderate activity pervaded the mining share market during the period under review. The general outlook of the market, so far as enhanced rates are concerned, is somewhat less favorable than at the opening of the week; prices since then showing a considerable recession throughout the entire list usually brought to the notice of dealers. With regard to the modes by which the immense accumulations of low-grade ores at the different mines on the Comstock Lode will be made available for profitable reduction, we extract the following from a letter to the *Daily Herald*:

The railroad between here and Carson, misnamed the Virginia and Truckee Railroad, is not progressing very fast in construction at the present time. Considerable grading has yet to be done, but as the iron for the track will not arrive for six or eight weeks yet, Sharon & Co. have concluded not to push things too fast, but to wait awhile, and so save the use of the money. They have taken off the hands employed on the last tunnel near Virginia, which can be finished in a week, and during the next three or four days will discharge 600 Chinamen and over 200 white men. It will not require a very large force to complete the grading.

Adolph Sutro, the famous projector of a certain tunnel between Carson River and the Comstock ledge, is here. He is trying to put his grand project through now, by means of small subscriptions from miners, or anybody else who will take small or large amounts of the stock. That is his best chance of success now, as for interested reasons the capitalists are averse to investing in it, regarding it with an unjustifiable degree of jealousy. This tunnel certainly is a very important work, and would be a great advantage to the country. Through it to Carson River is less than four miles, straight track; and the tunnel once completed, cars could be run backward and forward regularly, regardless of snow, rain, or any other vagary of the elements, at all seasons of the year. It would also tap the Comstock mine hundreds of feet deeper than the present lowest workings, and afford the best possible drainage. Sutro has fought against all manner of discouragements for a long time, but that tunnel will eventually be run, whether Sutro has anything to do with it or not.

HALE & NORCROSS—exhibited considerable activity toward the close, but transactions show a recession in prices. During the week ending August 21st, the upper mine of this claim yielded 302½ tons of ore, and the lower 456½, making a total of 819½ tons. At the above date, 772½ tons were on the dump. On the afternoon of the 22d inst. they finished retimbering the shaft between the fourth and fifth levels, and immediately commenced hoisting ore from the fifth level. They found the drifts and tunnels in perfect order, and recommenced breasting in the ore. The drift going west from the fifth floor of this level has not reached the west vein. On the 400-level they are continuing to sink the winze; the ore is three feet wide, averaging $60 per ton by assay for the week.

CHOLLAR-POTOSI—was in the market to a considerable extent, at quite uniform rates. For the week ending August 20th they mined 1,675 tons of ore. This amount came from the following localities: Blue Wing, 1,045; New Tunnel, 300; and Grass Valley station, 330 tons. The stopes in the Blue Wing station continue to look promising. The faces are in as good a condition as they were thirty days ago. The New Tunnel ore locality shows no change for the better.

GOULD & CURRY—sold to a moderate extent. During the week ending August 23d, the upper chambers of this mine produced 246¾ tons of ore. At the seventh level very little work has yet been done, owing to the hrcakage in pump gear. The drift running north-east is in twenty four feet, the material passed through consisting of clay and porphyry.—The OPHIR drift was in 549 feet on the 24th inst.—BULLION levied an assessment of $10 per share on the 21st inst.

YELLOW JACKET—exhibits a considerable decline, under rather heavy sales. A correspondent says: "The north shaft of the Yellow Jacket will be rid of water, mud, etc., in about two weeks longer, when an incline will be opened from the 700 to the 800-level, and the extraction of ore will be commenced. The south part of the mine is yielding as usual. The present assessment of $10 per share became delinquent on the 18th inst. I hear it hinted that another similar assessment will be levied as soon as it can be legally done, as the expenses have been in excess of the receipts for some time past, and still are so. That probably will be the last assessment, for the good ore in the north mine will make things all right as soon as it can be got at advantageously."

PAMPHLETEERING.—It is said of the circulation of the pamphlet edition of Mr. Sumner's late speech on the Alabama question, that 165 copies were sent to the American press, 20 to the English press, and 310 were sold—that's, all. Pamphleteering in this age of newspapers don't pay. A more mortifying remark was probably never made than that which Fontenelle made to a man who, having need of his assistance, came to him to apologize for having, at a previous time, written a pamphlet against him. "Sir," said the philosopher, "this is the first time I ever heard of it."

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alleghany Cons., Sierra co., Aug. 6, 50c	Sept. 7	Sept 23*
Black Jacket, White Pine, Aug. 18, 10c	Sept. 17	Oct. 21
Bucklin, White Pine, July 14, 5c	Aug. 20	Sept. 10
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Brodt, White Pine, June 23, 25c	July 29	Sept. 4
Bromide Flat, White Pine, Aug. 12, 50c	Aug. 26	Sept. 16
Bullion, Storey co., Nev., Aug. 21, $10	Pay. immediately.	
Chipiopena, Sonora, July 26, $2.50	Aug. 26	Sept. 11
Cordillera, Mexico, July 23, $1	Aug. 24	Sept. 8*
Central No. 2, Storey co., July 14, $5	Aug 16	Sept. 4
Green Point, Storey co., Nev., Aug. 6, $5	Sept. 9	Sept. 28
Daney, Lyon co., Nev., Aug. 5, $1	Sept. 8	Sept. 26
Eclipse Cons., White Pine, Aug. 11, 50c	Sept. 16	Oct. 8
Evening Star No. 1 White Pine, Aug. 25, 10c	Sept 24	Oct 15*
French, White Pine, July 19, 5c	Aug. 24	Sept. 13*
Glenwood, El Dorado co., Aug. 2, 30c	Sept. 8	Sept. 28*
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Aug. 30*
Hope Gravel, Nevada co., July 8, $1	Sept. 13	Oct. 4
Hornet, White Pine, July 24, 10c	Sept. 8	Sept 30*
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 24
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Julia, Storey co., Nev., Aug. 4, 75c	Sept. 7	Sept. 25
Kincaid, Tuolumne co., Aug. 4, $2 50	Sept. 8	Sept. 22*
Kentuck, Storey co., Nev., Aug. 7, $10	Sept. 6	Sept 25
La Plata, Sonora, Mex., July 8, 2½c	Sept 13	Oct. 1
Lucky Ledge, White Pine, July 16, 10c	Aug. 16	Sept 6
Lyon M. & M., El Dorado co., July 21, $2.	Aug. 30	Sept. 20*
Mammoth, White Pine, July 16, 25c	Aug. 23	Sept. 13
Maxwell, Amador co., Aug. 14, $1	Sept. 16	Oct. 12
Mazeppa, White Pine, June 30, 10c	Aug. 5	Sept. 14
Magenta, White Pine, June 23, 10c	July 29	Sept. 4
Mammoth Cave, White Pine, July 12, 10c	Aug. 19	Sept. 24
Morning Star, Alpine co., July 21, $1.50	Aug. 31	Sept. 18*
Marlborough, White Pine, July 19, 5c	Aug. 24	Sept. 13*
North Bloomfield, Nevada co., Aug. 6, $3	Sept. 9	Sept. 25
New Era, Amador co., July 13 40c	Sale Sept 1	
Ophir, Storey co. Nev., July 23, $3	Aug. 25	Sept. 18
Pilarcitos, Sierra co., July 19, 50	Aug. 23	Sept. 13
Pacific Cons., White Pine July 30, 10c	Sept. 8	Sept. 28
Pacolito, White Pine, Aug. 2, $2	Sept. 6	Sept 27
Phœnix, White Pine, July 12, 15c	Aug 12	Sept 30
R. E. M. Co., Humboldt, Nev., July 27, 2½c	Sept. 1	Oct. 1
San Jacinto, Tin, San Bordino co., Aug 20, 5c	Oct 4	Oct 18
Segregated Belcher, Storey co., Aug. 5, $1	Sept. 9	Sept 29
Sierra, Douglass co., Nev., Aug 24, $2	Sept. 23	Oct. 14
Silver Vault, White Pine, July 1, 5c	Aug. 7	Aug. 28
Silver Eagle, White Pine, July 12, 25c	Sept. 6	Sept 26
Silver Sprout, Inyo co., July 27, 50c	Aug. 31	Sept 20*
Taylor, El Dorado co., Aug. 25, 20c	Oct. 4	Oct. 21*
Tecumseh, Calaveras co., July 22, $7.50	Aug. 24	Sept. 18
Tuscarora Trove, White Pine, July 26, 25c	Aug. 30	Sept. 18
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Aug. 30*
Virginia, No. 2 White Pine, July 21, 2½c	Aug. 26	Sept. 11
Wells, White Pine, Aug. 10, 30c	Sept. 17	Oct. 7*
West California, White Pine, July 19, 10c	Aug. 17	Sept. 2*
Yellow Jacket, Storey co.... July 19, $10	Aug. 18	Sept. 17

MEETINGS TO BE HELD.

Clear Lake Water Works	Meeting September 6
Germania Cons	Meeting, Sept. 9
Hale & Norcross	Annual Meeting Sept. 9
Succor	Meeting September 6
Senator, Storey co., Nev	Annual Meeting Aug. 25*
West Point, White Pine	Annual Meeting Aug. 25

LATEST DIVIDEND.

Amador Co., div. $8 per share	Payable August 7, 1869
Alpha Cons., Storey co., Nev., div. $2	Pay. June 19, 1868
Bullion, Storey co., Nev., div. $10	Annual Meeting Sept. 9
Caney, preferred Stock, div. 1½ per cent	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12 1868
Chollar Potosi, div., $2	Payable August 6, 1869
Eureka, div. $8	Payable August 10, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Golden Chariot, Idaho, div. $8	Payable June 15, 1869
Golden Rule, Tuolumne co., div 50c	Payable June 25, 1869
Hale & Norcross, div. $6	Payable July 10, 1869
Imperial, Storey co., Nev., div	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 6, 1869
Keystone, Sierra co., div., $32	Payable May 6, 1869
Kentuck, div., $20 per share, &c	Payable Jan 10, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Unassessable, div	Payable June 18, 1868
Sand Springs Salt, dividend, $4	Payable Jan 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec 19, 1868
Savage, Virginia, Nev., dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., div. 50c	Pay. August 10, 1869
Virginia & G. H. Water Co.	Dividend, payable April 16, 1869
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this ournal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, August 27, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	87	89
Legal Tender Notes	74½	—
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par	& int.
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par	& int.
San Francisco City and Co. Sch'l Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	25	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	52	53
State Telegraph Co	25	—
Spring Valley Water Co	60½	—
OAS COMPANIES.		
San Francisco Gas Co	—	84½
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	69	70
Central Railroad	54	58
North Beach and Mission Railroad	67½	69
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	500
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	91
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	150	160
MINING STOCKS—WASHOE DISTRICT.		
Alpha	17	17½
Baltimore American	—	—
Belcher	17½	19
Bullion, G. H.	11	12
Crown Point	27½	28
Cole (Va.)	—	—
Confidence	20	—
Consolidated Virginia	—	—
Chollar-Potosi	19	—
Daney	1	—
Exchequer	6	9
Empire Mill and Mining Co	36	—
Gould & Curry	83½	85
Gold Hill Quartz	33½	40
Hale & Norcross	111	112
Imperial	46	48
Julia	1	2
Justice and Independent	63½	69
Kentuck	186	188
Lady Bryan	27½	29
American	28½	29
Occidental	14	15
Ophir	17½	18
Overman	76	78
Segregated Belcher	11	11½
Savage	52	52½
Sierra Nevada	6	6½
Union	—	—
United States	—	—
Yellow Jacket	45	45¾
MISCELLANEOUS MINING STOCKS.		
Amador (California)	275	290
Aurora, White Pine	5	10
Eureka, (California)	205	—
Golden Chariot (Idaho)	27	30
Silver Cord (Idaho)	1	—
Golden Rule, California	5	—
Pocotillo, White Pine	—	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, August 27, 1869.

Flour, Extra, ₱ bbl	$5 50	@	$6 00
Do. Superfine	—	@	5 00
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 25	@	1 75
Oats, ₱ 100 lbs	1 85	@	1 90
Barley, ₱ 100 lbs	90	@	1 25
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	1 10
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14¾	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	20
Do. Rio	—	@	19
Tea, Japan, ₱ lb	75	@	90
Do Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5¾	@	6
Coal Oil, ₱ gallon	43	@	45
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	40	@	50
Isthmus butter, ₱ lb	30	@	33
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	45	@	50
Lard, ₱ lb	16	@	17
Ham and Bacon, ₱ lb	14	@	17
Shoulders, ₱ lb	8	@	9

Retail Prices.

Butter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	30	@	40
do. Oregon, ₱ lb	30	@	40
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	50	@	60
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1½	@	2
Potatoes, sweet, ₱ lb	3	@	5
Tomatoes, ₱ lb	3	@	—
Onions, ₱ lb	3	@	—
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	—
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, ₱ piece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O.	7	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, August 27, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1¼c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1¾@2½c ₱ lb; Plate, 1½c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2½c ₱ lb.

Scotch and English Pig Iron ₱ ton	$35 00	@	$36 00
White Pig ₱ ton	34 00	@	35 00
Refined Bar, bad assortment ₱ lb	—	@	—
Refined Bar, good assortment, ₱ lb	—	@	—
Boiler, No. 1 to 4	—	@	—
Plate, No. 5 to 9	—	@	—
Sheet, No. 10 to 13	—	@	—
Sheet, No. 14 to 20	—	@	—
Sheet, No. 24 to 27	—	@	—

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb.

Sheathing, ₱ lb	—	@	—
Sheathing, Yellow	—	@	—
Sheathing, Old Yellow	—	@	—
Composition Nails	—	@	—
Composition Bolts	—	@	—

TIN PLATE.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	—
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	—	@	—

STEEL.—English Cast Steel, ₱ lb

	—	@	—
	—	@	15

QUICKSILVER.—₱ lb

	55	@	60

LEAD.—Pig, ₱ lb

	7½	@	8
Sheet	10	@	—
Pipe	11	@	—
Bar	9	@	9

ZINC—Sheets, ₱ lb

	10½	@	11

BORAX.—California, ₱ lb

	45	@	50

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Aug. 27, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		Per ton.
12 per cent. ore	$16 00	23 per cent. ore	$43 56
13 " "	18 62	24 " "	46 46
14 " "	20 20	24 " "	49 33
15 " "	23 35	25 " "	52 22
16 " "	26 25	26 " "	55 11
17 " "	29 12	27 " "	58 00
18 " "	29 91	28 " "	60 80
19 " "	34 90	29 " "	63 77
20 " "	37 78	30 " "	66 66
21 " "	40 67	31 " "	69 55

These prices, we believe, will be found substantially correct, and can be realized at this date.

AN ARTIFICIAL INTERIOR SEA.—M. de Lesseps, the engineer of the Suez Canal, has come to the conclusion that the Desert of Sahara is the bed of an old sea, and is considerably lower than the Red Sea. He is satisfied that a canal of seventy-five miles would re-fill it, and put the two in communication, making intercourse with Central Africa an easy matter.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Leviathan.—*Miner*, Aug. 14th: We learn that the Leviathan, which started up a few weeks since with such flattering prospects of continuous work, is to be suspended again to-day. False representations as to the cost of delivering the ore in San Francisco, and other matters, made by the London agent, which the owner here cannot see his way clear to back up, it is said causes the let up.

Globe.—Thursday morning a cave occurred in the Globe tunnel. It is thought the true casing of the Hercules lode is cut.

M. C. Mill.—A series of experiments are about to be made in this mill which we think will determine how practically to work the ores of Alpine to profit.

Pennsylvania.—*Chronicle*, 14th: The mine is being timbered. The south drift is in 120 feet, and the ore taken out looks well. The Company intend to raise on the ledge and if it prospects well negotiations for a mill will be closed.

On Dit.—Rumor says that one or two prominent claims in Silver Mountain District, have been purchased by a company of English capitalists. This company have a paid-up working capital of $300,000, and it is their intention to start up work so soon as the Resident Manager arrives from England—about the 20th of September.

The Mountain.—The work in this tunnel progresses finely. The rock is getting softer, and on Thursday the tunnel cut a feeder of fine looking quartz. The ledge is liable to be struck at any moment.

BUTTE COUNTY.

Union Ranch.—Correspondence of Oroville *Record*, Aug. 21st: "Mr. Derrick has got the quartz mill at Oregon City in full blast. Report says he is crushing very good rock and the batteries look well; * * I took a stroll down to the North Fork, on Sunday, and found Johnson & Hartwell almost ready to turn the water through their flume. The flume is almost seven hundred feet long, 35 feet wide at the head, and 33 feet at the foot, with six sides. With the low stage of water, they think the water will only be about three feet deep in it, thus leaving a large portion for a freshet.

CALAVERAS COUNTY.

New Diggings.—*Chronicle*, 21st: We are informed that a French Company who have been prospecting Boston Hill have discovered a lead of rich gravel.

NEVADA COUNTY.

Weekly Mining Review.—Grass Valley *National*, Aug. 22d: The Idaho company in the first, second and fourth levels, is taking out ore, and is opening the fifth level both to the east and the west. The rock in all the levels is looking well.

The North Star mine is again under full headway. About 120 men are at work. The mill is running regularly. The rock which is coming from the 800 foot level shows rich in free gold as well as in sulphurets.

The Wisconsin company is going down to the 400 foot level. The ledge is increasing in size. Rock is being constantly taken out of the 300 foot level. The frame for the new mill building is being erected.

Union Hill company is taking rich rock from the first and second levels. This mine is more than paying its way.

The Dromedary mine is being worked steadily. On last Friday a clean up gave over $30 per ton.

The Old Rush Mill has been sold to a company of Frenchmen who removed the machinery, and proceeded to wash out the foundations of the batteries. This paid well, showing that all the gold has not been saved. A clean up showed $3,000 to the French company, and more ground yet to be washed.

The Empire mine is being worked by a full complement of hands. Rock is coming out from the eighth and ninth levels, and Capt. Lee is sinking for the tenth, which will be the 1,000th foot level. The ore in the ninth is looking better than at any previous time. The mill of the Empire is running night and day with thirty stamps.

The Hope Gravel company's drift tapped a large body of water. Yesterday the water was entirely pumped out, and this week the company will commence to wash gravel.

The McClellan started up their steam hoisting and pumping works yesterday. Their ledge is a large one, showing plenty of mineral, which assays well, though no gold is to be seen in the rock as yet.

Union Hill.—Work on the Lucky mine will soon be resumed. The Union Hill mine is in successful operation. They are running twenty stamps, and in the last ten days' run have cleaned up about $15,000.

Ben Franklin Ledge.—*National*, Aug. 21st: The Washington mine is yielding $50-rock. The Ben Franklin milled last week 96 loads of rock which paid over $50 a load; this gave the men working on shares, $600 a man for two month's work. The Dresskel mine continues to maintain the even tenor of its way, the rock paying all the way from $20 to $50 a load. The ledge in the Small Hope is improving as it goes north toward the Dresskel, which which is working within about 100 feet of the Small Hope line.

Quartz Mill Burned.—*Gazette*, 19th: Mr. Allen, who came down yesterday from Eureka, informs us that the Commercial quartz mill at that place, owned by Messrs. Valentine & Co., of San Francisco, was destroyed by fire on Monday evening. Loss is estimated at $10,000. It is supposed to have been the work of an incendiary.

Omega.—20th: Placer mining is almost entirely suspended for lack of water. Drifting and putting into shape for next season is about the only work being done. The Salathiel quartz ledge and mill on Diamond creek, is kept running only half the time. The ledge in the tunnel varies from two to five feet in width, and pays uniformly well.

Suspended.—21st: The Pittsburg mine suspended operations yesterday and most of the men employed were discharged.

Important Strike.—We understand that the company working the Kansas claim, on the ridge a mile and a half above Nevada, struck rich gravel a day or two since. The company have been several months sinking shafts and running drifts to find the continuation of the Nebraska lead, and have at length succeeded. The work has been suspended for the present, with the view of putting up better machinery.

You Bet.—*Transcript*, 18th: The mining prospect is encouraging. Neece & West are preparing their claims for hydraulicing. They have extensive banks, 170 feet deep, and containing first-rate gravel. Last week they discharged a blast of 280 kegs of powder, and were 27 hours in getting in the charge. The blast was exploded by a galvanic battery. There are ten men employed. Conway & Cook have a contract for running a branch tunnel 225 feet, to bring the main tunnel under the banks, and enable them to drain the claims and work through the tunnel. When completed, the entire tunnel will be 900 feet long.

Meadow Lake.—Since the success of the Burns' process is established, Meadow Lake mining district is looking up. Burns & Blood have the old Winton mill. Their roasting furnace was started up on Monday week, and thus far its workings have been highly satisfactory. The process consists of first roasting the rock, and then subjecting it to what is called a chemical bath, the solution being that discovered by Mrs. Burns. The rock being thrown into the solution after roasting, remains until cooled, when it is worked by the ordinary mill process. None of the rock has yet been worked in the mill, but some tested in a mortar was found to amalgamate readily.

Harrigan, Doling & Co. are putting up a furnace for roasting the ore. A small furnace has already been tested and worked well. The rock from their mine will be worked in the Monitor mill, and the same solution will be used as by Burns & Blood.

Culbertson & Keeney have secured the Enterprise mill, and will start crushing in a day or two on rock from Red Mountain.

The Grant Co. recently shipped 20 tons of rock to Grass Valley to be worked, and 500 pounds from the Empire mine has been sent to San Francisco to be assayed.

PLACER COUNTY.

Rich Ore.—*Herald*, 21st: W. G. Green left in this office, last Saturday a specimen of gold bearing quartz, thickly studded with pure bright quartz. It came from his mine, a mile or two west of town.

PLUMAS COUNTY.

Twelve Mile Bar.—Correspondence of Quincy *National*, Aug. 14: Mr. Ward has completed his flume, and started his pumps last week; Ward & Brown, near Hardsock Point, have their flume nearly completed; will be washing in a few days. Cole, Wright & Co. have reached the bank channel in 12-Mile Bar Hill, for which they have been running for the past four or five months. Sheizer & Co. continue piping and have excellent prospects. Johnson, Mercer & Co. had nearly completed their wing-dam when a portion of the wing gave way. This will set them back about a month. But they will be taking out pay by the first of September, and do well yet. Halstead & Co. continue piping; have good prospects. There is a number of men prospecting on Rich Gulch, and as soon as they are able to get water they will do well.

SIERRA COUNTY.

Big Chunk.—Downieville *Messenger*, Aug. 21st: A piece of gold weighing 106 pounds was taken from a claim near the Buttes on Wednesday last. The whole amount taken out that day was $50,000. This is the largest piece ever found in this county.

Chispa.—We heard the other day that some Celestial miners on the South Side had picked up a nugget weighing nine pounds, valued at over $1,800. They cut it up into small pieces before selling it.

Arizona.

Sterling.—Prescott *Miner*, Aug. 7th: Rock is now being hauled from the mine to the mill, and it will not be long before crushing will be commenced. The ledge is said to be looking well.

Arizona City.—Correspondence of the above: Dr. Phillips is working the Eureka mine.....The Gila mining Co's mill is running. To judge by the rock I think it pays well. ...Large shipments of ore are being made from Hamilton & Butterfield's mines at Castle Dome.

Colorado.

Mining Items.—Central City *Herald*, Aug. 18th: Bucklin & Babcock, on the Fairfield lode, Russell Gulch, at a depth of 87 feet, have a solid vein of copper and iron pyrites two feet thick, which is very rich.....Mr. Beach has taken two batteries out of the Briggs mill with a view to putting in the Wilson steam stamp-mill..... The Quartz Hill tunnel has been carried into the mountain 430 feet. Water runs freely from the tunnel. The indications of pay improve as the work advances.....Ex-Mayor Slaughter has struck a fine lode in Virginia Cañon, which yields ore worth $300 per ton in silver. He is going to make a test run at Stewart's this week..... A 12-stamp mill is nearly ready to start at the head of Peck Gulch. It will be supplied with ore from the Man and Surprise lodes.....J. V. Kimber is successfully running his 24-stamp mill at the foot of Chase Gulch, night and day, on ore from the Bates & Hunter and California (Stocker & Stanley) lodes. J. B. Tomlinson is running the Hollman (12-stamp) mill at Black Hawk, with excellent results, principally on Bob-Tail ore.....We were shown a beautiful retort weighing 159 ounces, the result of five days' milling at the Smith & Parmalee. Stalker & Standley sold six bars of gold to Warren, Hussey & Co., for $4,500; the product of one week's run from the California mine, Nevada.

North Clear Creek.—Water is low. New York mill running only 20 stamps on California ore. Woodbury & Co's 12 stamps on Ophir and Gaston. Consolidated Gregory has resumed work.

Two tons of ore from the Seaton lode, Clear Creek County, treated by Prof. Hill, last week, yielded 166 ounces of silver per ton.

Pleasant View Mine.—The shaft is now 150 feet deep. The vein in the east drift is fully eight feet wide. The smallest return yet made for a lot of 25 cords of ore, was equal to 100 per cent. net profit.

Clear Creek.—The vein of ore in the Baltimore tunnel is from four to six inches wide, and assays $350 per ton. It was struck at a depth of 150 feet from the surface.

The shaft on the California lode, Sherman Mountain, is now 35 feet deep. The vein is eight inches wide and very rich.

The Baker Co. will start three Bruckner cylinders in two weeks. Their mill is one of the finest in the country.

Hnepeden & Co. are putting up another cylinder. They have been running on Equator ore for a few weeks. The Equator are putting up an engine for hoisting ore.

Prof. Dibbin will have his mill ready to run in two weeks. He is going to run the ore raw in pans. He will put up a Bruckner cylinder also.

Terrible.—The shaft is 185 feet deep. The tunnel, 7x7 feet, is being driven with the Burleigh drill nine feet per week.

Trail Creek.—*Register*, Aug. 19th: Bennett's little steam stamper is at work periodically. We understand that they are very well satisfied with it so far. Cramer & Chavanne's arastra is grinding away steadily on Coyote rock, with very flattering results. Dr. Holland also has two arastras in the Halo mill, one of which is running on Coyote rock, and the other will be started in a few days. Judge Colvin has his mill building nearly completed, and is setting up his engine and boilers. He also has a gang of miners at work taking out ore.

Peck Gulch.—Mr. Irwin has struck an extension of Dr. Mann's lode and has a strong vein that prospects largely.

Virginia Canyon.—Two tons of ore from the Seaton lode, Virginia Cañon—one ton taken from the dump, and one ton from one of the upper levels—was recently reduced at Prof. Hill's works, with a result of 166 ounces silver per ton.

Ward District.—T. J. Graham came over yesterday, with 20 ounces of retort from the Columbia lode. He says that Arnot & Co. are at work on the Buckhorn lode, at Jamestown, and taking out ore of a better quality than usual. Several arastras are running surface ores from various lodes with good results. Reports from the Gold Hill mines continue encouraging. Bottleson's mill is working steadily. Parties are working the Williams' lode with encouraging results.

Mill City.—Business reported brisk owing to recent discovery of rich silver lodes. Two reverberatory furnaces have been put up in the old McIntyre mill, also one Hagan furnace for gold ores. Hawkins & Dodge have 20 or 30 tons of first-class ore out. Cook & Carpenter have the same quantity out at the Capital shaft, also very rich in silver.

Prize and Gunnell Hills.—Three different parties are at work on the Jones' lode. Ore looks well. Lowe, on the Prize, has 30 tons of smelting ore out. Gilbert's mine turns out two cords per day of stamp rock and considerable ore. Surface rock from the Gunnell looks well.

South Park.—Cor. Denver *News*, Aug. 18th: This year we have double the number of men employed in our placer mines that we ever have had during any previous season, and they are taking out more money than ever before. There is not a quartz mill in operation in Park County, yet there is no mining district in the Territory that has more or richer lodes. Unfortunately, however, they are controlled by Eastern men who are playing a "freeze out" game.

Idaho.

The Bedrock Shaft.—Idaho City *World*, Aug. 19th: Work is still vigorously prosecuted. On Sunday a vein of water was struck, which bothered the men in the shaft for a day, but they finally got the mastery of it, and on Tuesday night they struck upon fine white sand. All through this small pebbles of quartz are found, and the miners accept these as good indications that they will strike a rich-paying stratum of hard gravel. The shaft was sunk to nearly 90 feet depth up to last evening.

Alturas County.—The Casco mine at Red Warrior has yielded better than ever, during the past month. At a depth of less than 200 feet a well-defined ledge was struck which averages two feet width, and yields free gold, with a slight dash of silver in it. This ore is readily reduced in the mill without the aid of pans. A ten-stamp mill is employed, and a force of 20 men run the mine and mill.

At present very little is going on in the Yuba district. The Monarch Co. have bought the old Farnham mill.

At Rocky Bar, arastras are crushing ores from the Idaho and Confederate Star ledges, and good products are obtained. From three tons of Idaho rock the yield was $3,500.

Ida Elmore.—Silver City *Wave*, Aug. 17th: Parties who visited the Ida Elmore on Sunday last assure us that the dump is showing the richest ore ever taken from the mine.. .Sam. Neely has given us a specimen of Baxter ore, showing ruby silver in every solid part so red and dense as to stain through a coating of chloride on one side. ....The Sullivan boys are still working on their ditch, taking water from the head of Jordan Creek, Sawpit and Long gulches over into Jacob's Gulch. They have a tunnel on the divide through which the water is conducted.....The Miner mill started up promptly on Red Jacket ore on Wednesday morning and will probably be kept busy the balance of the season..... The Potosi mine is showing some elegant rock. We saw a piece a day or two since so full of free gold in strings or wires as to hold the rock together after it was broken with a hammer.....Red Jacket intends to commence sending ore to the Miner mill. The shaft is down 81 feet and 60 feet of drifts driven—thirty each way. ....The Cosmos mill cleaned up on Saturday after two or three weeks' run on Silver Cord ore. The mill will now be idle for a couple of weeks to allow the miners to get ahead a little.

Wagontown diggings are quite an attraction. Locations have been made from a

shortdistance below Wagontown down the creek seme feur miles. Hutchiags, Sheehan & Co., Skinaer & Co., Thompson & Ce., P. J. Reagan & Co., aad some 20 or 30 others, have made locations that are believed to be good for more than wages, say eeven to ten dollars. Water is net very plentiful just now, though a mederate elaice head is running.

Montana.

ARGENTA.—Virginia City *Republican*, Aug. 11th:—Griffith and Hanson have opened their coal mine, three miles this side of Argenta, to the depth of forty feet. The veiu is six feet in width, bituminous, aad of exeellent quality. The mino could not be more fortunately located fer the furnaeces of Argenta. Tho furnace of Cummings & Vealo, and that of Tootle, Leach & Co. are in full blast, with plenty of rich ore to keep them ia constant operatien.

BANNACK.—The Bannack Ditch Company have taken ont of their placers one thousand ounces of gold in the last thirty days. The geld is of a very superior quality, and sold readily for $24. per ounce. The company employs thirty hands. All the other places about Banuack are being worked with success. Brown, Bray and others have completed a new ditch, for miniag the placer opposite the town. They are about to make extensivo excavations ia the bed of the creek.

WILLIAM'S GULCH.—In the Stiles Extension Lode, No. 2, from two pounds and a half of rock, by cammoa pan proeess, the yield was forty-one cents. The rock is little better than the average of the lede. The crevice is from ten to sixteen inches wide and increasing. The ore was taken frem a depth of seven feet.

UNION PACIFIC LODE.—It is in Brown's gulch, three miles from Virginia; has a crevico of eight feet in width, and has been excavated to the depth of twenty-soven feet. The last run made of the ore yielded $600 to the ton. The ore is principally silver.

SOAP GULCH.—This is 55 miles from us toward Deer Lodge City. Splendid prospects havo been obtained from bars on the west side of the gulch, about a mile above its mouth, as high in somo instanees as a dollar to the pan. A bed-rock flume is being constructed near the center where the ground is very deep, tho result of which will settle the fate of the new diggings.

Nevada.

COPE DISTRICT.

SPECIMENS.—Elko *Independent*, Aug. 21st: Geo. Cowles presented us yesterday two beautiful specimens of gold and silver bearing quartz that were washed out of the placer diggings at Cope. The sharp edges show that the lode from which they came caanot be far away; ia fact, Mr. Cowles says the miners think it is already discovered. Every mine upon which work is being done is turniag out splendid ore.

A MILL FOR COPE.—Uncle John Atchison and Col. Drew have gone to San Francisco to procure the necessary machinery for a tea-stamp mill.

ELKO COAL MINES.—The Coal Mining Company, whose claims are located south of the river, have beeu for some time engaged in sinking an air shaft. They intend to resume operations on tho veiu with an iucreased force.

COPE.—Territorial *Enterprise*, Aug. 21st: Pat Clogan, an experienced prospector, arrived in this city a day or two siace, direct from Cope. He says there are about three hundred meu in the district. The assays run from $400 to $700, principally in silver. We were shown ore from the Virginia, Tiger and Keystone, which assays as above. They expect to have at least one mill in operation in the district beforo winter. There are supposed to be good surface diggings, as prospects panning from a color up to twenty-five eents per pan have been obtained in several dry gulches. The ceuntry will be a pleasant one iu which to winter. Little snow or cold weather is anticipated by the miners, nevertheless they are erecting comfortable cabins.

The Silver City *Wave* of the 17th, has the following item direct from Mountain City:—The Mill Creek ditch will he completed this fall, but there will be no water before next spring. The placer mines will pay from five to ten dollars per day and are quite extensive. Flonr is $12 per 100; lumber, $150 per M. A new quartz lodo has been discovered across the river from Mountain City, called the Mountain Maid, said to be richer and more extensive than any former location in the district.

REESE RIVER.

LANDER HILL.—*Reveille*, Aug. 21st: Everything is lively. The Plymouth shaft has started up, and will not stop until it has beeu sunk 250 feet. Most of the small companies of miners who had rushed to "the poor man's paradise" have returned and are investing a little mere muscle in tho old hill. One who returned from W. P. not long since in a most dilapidated conditiou has already realized over two thousand dollars from one erushing at the Manhattan mill. Another has cleared five thousand during the season, showing that we have some chlorides here as well as elsewhere.

MINERAL HILL.—*Reveille*, 21st: The work done so far is highly encouraging, and the miners more hopeful than ever. Some forty tons of ore is on the way here to be milled.

The Elko *Independent* has seen some very rich rock from Mineral Hill District. The New Jersey Compaay now have six men at work. A large lot of ore is being sacked and will be forwarded to San Francisco this week. The owners say that this rock is as rich as any that ever came out of White Pine. A mill is to be built immediately.

HOT CREEK.—Correspondence of the *Inland Empire*, Aug. 18th: "There are several of us who have net yet deserted the old camp. These hills are full of the precious metals, and it only requires coined money to bring forth the crude article in vast quantities. I will not go into the details which have been se often given; but I will say that we have lots of developed and undeveloped mines—ledges as wide as true fissure veins ever are, bearing large quantities of ore that will mill from $75 to $300 per toa. * * The Silver Mountain Co. are prosecuting work oa their claims. Mr. Crosby, their Superintendent, is going down, piling up his ores at one side, and when he arrives at the right depth, his mines will be in good shape, and the mill—which will undoubtedly be built—will have a coastant supply of ores, and then will Hot Creek see palmy days."

WASHOE.

[In the Stock Circular, in another portiou of this paper will be found late mining news from this district.]

YELLOW JACKET.—*Enterprise*, 15th: The water is nearly out of the north shaft, and it will take a couple of weeks to get out the 40 feet of mud and debris at the bottom. Considerable repairing has to be done to the timbering. The new building is completed. The Yolo tunnel yields 50 tons of ore per day. The south mine yields 150 tons per day, from the two lower levels. A winze connection from the 900-foot level to the 800-foot level of the Kentuck will be completed to-day, giving an increased circulation of air in both mines. The 700-ft. level is still tightly closed, as from the gas leaking out it is fully evident that the fire still burns there and in the two mines eouth. This fire is evidently above the 700-foot level—between there and the surface. It may burn for months yet, but that will make little or no difference, as the mine is being brought iato good working eondition, regardless of the upper levels. A splendid new hoiler is being put in at the hoisting works.

VIRGINIA CONSOLIDATED.—The shaft is down 211 feet. They will have their new steam hoisting works started the first of next week.

KENTUCK.—The winze connection will he completed this evening. It is at the south line of the Yellow Jacket, and is 100 feet in leugth. The Sunderland and Pioneer mills are crushing ore from this mine.

SIERRA NEVADA.—The first clean up for the month will be made Monday. The third monthly dividend of 50 cents per share on the new stock issue was declared Saturday, aggregating $7,500.

OVERMAN.—The Overman is looking well. The extensive body of ore at the 400-foot level is nearly 60 feet wide.

GOULD & CURRY.—Same of 22d: The drift east from the lower level is progressing well, but develops no ore as yet. The old upper workings of the mine yield 50 tons of ore per day, the assays of which averago over $40 per ton.

IMPERIAL-EMPIRE.—The clearing out and retimbering of the caved portion of the shaft, below the 1,000-foot level is completed to withiu one set of timbers of the 1,080-foot station. The upper workiags eontinue their usual yield.

BELCHER.—A good body of ore is developed, over 100 feet in leugth from the south line above the 300-foot level, averaging six feet in width, and assaying from $50 to $100 per ton.

VIRGINIA CONSOLIDATED.—Shaft 242 feet deep to-day. The new hoisting works will start up to-morrow. Excellent progress is made in sinking.

SIERRA NEVADA.—Progressing as usual, and the mill pounding away on a run of extra good ore.

FLOWERY.—The Flewery is looking better than ever. Connections have been made between the incline and lower tunnel. The air is good and the prospects of the company flattering. They have upeu their dump 300 to 400 tons of ore which will pay a big profit.

OCCIDENTAL.—The lower tunnel is now in the ledge, and the experts agree that it is a big thing. The ledge, as all agree, is one of the most regular and best defined in the State, and the pay streak is found to be continuous from the creppings down te the present lowest working level—600 feet.

MILL ADDITION.—Gold Hill *News*, Aug. 19th: An extensive addition is being built to the Birdsall & Carpenter mill, Dayton, 136 feet in length by 60 feet in width. It will contain 20 pans, together with settlers, etc., but no stamps, as it is intended exclusively for the working of tailings, an immense amount of which have been collected during the last few years.

WHITE PINE.

MINING REVIEW.—*News*, August 21st: Werk has progressed quietly during the week. Two or three mines that had been idle have started up again; but the continued stringency in the money market of San Francisco operates as a serious hindrance to the resumption of werk on a large scale. Some of our leading mines that are constantly sending bullion te their offices at the Bay find it difficult evea to obtain coin enough at the present time to pay off their men. While this conditien of affairs exists, we cannet look for the usual activity in the work of development. It is gratifyiag, however, to observe that we are beginning to feel the effects of Eastern capital seekiag investment here. One sale has been effected, and negotiations in regard to others are pending. The hullion shipments of the past week fall below the average. The total amount, as published from day te day, is $49,925.30.

The same journal of another date says: "One may learn from tho *Reveille*, or almost any of the outside papers, that White Pine is a complete failure. But, strangely enough, millmen have seen inducements to justify hringing here and setting up somewhere about 130 stamps already; and they get a higher price for working ore than anywhere else; and the ore yields more dollars to the ton than rock found anywhere else; and the ery is 'more stamps' to work the ore accumulated on 200 dumps; and millmen are hunting places to set up their works; and machinery is eontinually arriving; and a water supply system of machinery, costiag more thau any private local enterprise on the coast, is erecting, owned by careful, shrewd capitaliste."

ITEMS.—*News*, 16th: Eclipse Consolidated, Chloride Flat, struck rich ore on Saturday....17th: The Anchor tunnel has struek a ledge, and is taking out good milling ore. The tuunel is in 85 feet.... Eberhardt is yielding a higher grade of ore than at any former period....Treasure Hill Consolidated is sinking a new shaft, and finding rich chlorides....Wooloomooloo shaft is down 36 feet in slate....18th: Tom Taylor showed us some very rieh ore yesterday from the Davis and Atchisou claims in the Mount Ophir regioa. The veiu is but four or five inches thick, but there is plenty of ore that will yield $100 and upward associated with and adjoiaing it. It is free from base metals. The Joe Trench mine in this vicinity yielded $800 per ton by smelting....Fiae orc is being taken taken from the Bromide tuanel.... Work resumed on the Argyle with 12 men. Thunderholt is being vigorously worked. ....Converse & Co's shaft is turning out good ore at a depth of 28 feet....Ditto Montauk....20th: The jnry gave the bullion in dispute to the plaintiff iu the ease of South Aurora *vs.* White Pine Mutual.... The Tom Paine miae was sold recently to Chicago parties for $12,000....H. F. Rico shaft is 50 feet dowu in limestone. Rock changing....Pocotillo now worked by two shafts. Good ore coming out ...A prospect ehaft is being suak on the Phil. Sheridan. Ore on the dump good....Assays from the James-Emma go $289 the ton. ....City of Dublin struck spar yesterday at 13 feet....Edgar shaft down 45 feet; indications good....Post-hole dividend for July is $4,000 per share. Four shares in the claim....A party of Cincinnati capitalists intend to put up a mill in the district. Five of them arrived to-day....*Empire*, 18th: Virgiaia 50 feet down; now in a large 30-foot chamber, showing ore on all sides except the south....Good ore from the Perley; one piece worth $400 per ton. ....19th: Several of tho prominent mines are housing in their shafts for winter.... 20th: Bowie & Brown's tunnel in 70 feet, and shows good ore.

MILLS.—*News* 17th:—Johu Tregloan has made arrangements to erect an excellent mill between this city and Hamilton. The mill is a perfect set of machiaery, ten stamps of 750 pounds each, capable of crushing fifteen tens in twenty-four hours, with five improved Varney pans aad two settlers—all to he driven by a fine engine of 40-horse power. On the ground is some natural water, and what is wanted over this will be furnished by the Water Company. The mill is the property of Messrs. Perkins, Flint & Co., of San Francisco, and is to be employed on custom werk.....Kohler Mill is erushing rock from Babyloa. We are informed that its crushing capacity it te be increased.....22d:—Stanford Mill building is nearly euclosed and most of the machinery already in place.

OUTSIDE DISTRICTS.—*News*, 19th: Steptee District was organized ou the 11th inst. It is 120 miles N. E. from here, 30 miles south of Humboldt Wells on the railroad. Mr. Osborne recently shewed us some exceedingly rich specimene frem there. Weed and water abundant. *Empire*, 18th: Letter from Pinto, says: "Seme of the richest ore ever seen iu any miniug district is beiag taken out and hauled to the Mohawk mill fer reductien." * * "The San Francisco Co. is hauling rock to the Newark mill. The rock is rich enough te pay for it."....The peorest looking piece of ore in a sack full of samples from Reveille District brought by Mr. Langmore, assayed $196 per tea.....21st: Letter from Kern District, says: "This district must eventually be one of the first camps ia the State."....*Telegram*, 18th: Patterson District mill will be runniag next week.

WATER WORKS.—*News*, 21st: Water is already into Hamilton and was yesterday runniag to waste. It will be on the Hill in a few weeks. The Hamilton reservoir, 8,000 galloas, was filled in 39 miuutes—although it leaked at first.

COAL.—*Empire*, 21st: We were yesterday shown a sample of the coal recently discovered on Pancake Mountain, 15 miles west of this city on the Austin road. It has tho appearanco of being the genuino article.

New Mexico.

MOREno.—The *Lantern* says: The clean up on Spanish Bar was a little over $300. ....The mines on Willow Creek had a good week's run. From two or three claims we hear of $400 each, and another $880.....Polloek, at the foot of Grouse Guleh, cleaned up $781, the result of the labor of ten meu for four days.....The California Co., in Humbug, cleaned up $411, being at the rate of about $11 per day for every man employed.

ALBUQUERQUE.—*Review:* Ten pounds of quartz taken from the Langston lode at Pinos Altos, yielded 24¾ ounces of gold.

Oregon.

THE LEWIS RIVER MINES.—*Oregonian*, Aug. 14th: Nothiug very definite seems to be yet known conceraing the richness of the mines on Lewis River, but parties are constantly going out from Vancouver, and there seems to be a general belief that fair wages can be made. The *Register* says: About 20 pack animals loaded with provisions and tools have left for the diggiugs within the past week.

We learu that diggings have been struck near Chelatchie Prairie, richer taan those at Texas diggings.

Jack Maguire, an old miner, has found mines on Cedar Creek. He says he ean make from four to six dollars per day. There seems to be a general confidenco in the continuance of these mines.

Mr. G. W. Miller says he shall start in on Lone Star Creek, where Texas is. He says there is plenty of gold out there.

We would state for the information of those going to the Lewis River mines that to go by tho way of Vaneouver is tho best routo.

PERRY CREEK MINES.—Walla Walla *Union*, 7th: Mr. James Smith arrived here from this new mining camp on Tuesday last. He reports the camp in a flourishing condition, the miners generally having more confidence in their richness. The claims which have been properly worked have paid well, and some largely. Nuggets worth from $25 to $100 have beeu takon out.

MOOSE CREEK.—Same: Mr. Daniels, ono of the returned victims from Moose Creek, pronounces it one of the greatest humbuge of the day. He says tho greatest discovery claim did not pay the company 25 cents per day to the hand.

GALVANIZED IRON.—This is iron "zinced" by removing the scale with sulphuric acid and immersing in a bath of melted ziuo.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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San Francisco:
Saturday Morning, Aug. 28, 1869

Notices to Correspondents.

Carpenter.—It has been found by experiment that cubes of the same size of the following different woods, when allowed to remain in contact with water for five months, lost respectively of their substance the following percentages: Unseasoned oak, 24; seasoned oak, 12; African teak, 3½; Moira wood, 4; Honduras mahogany, 3; Santa Maria, 1.6; Greenhead, 5.6; Moulmein teak, 1.7. The facility of mildewing or seasoning was found to be in the following order: Unseasoned oak, rapid; seasoned oak, much less; African teak and Honduras mahogany, much less; Moira wood, Santa Maria and Maulmein teak, none.

B. Y.—Volcanic action does take place in very high latitudes, as two volcanoes were observed in actual eruption by Scoresby on *Jan Mayen's Island*, in latitude 71° N., their lavas being described as basaltic; and the east coast of Greenland is said to be of volcanic formation through many degrees of latitude,—massive alternating beds of basalt and basaltic conglomerate rock composing the cliffs of the coast. Mt. Erebus, in Victoria Land, according to Sir John Ross, is a volcanic mountain rising more than 12,000 feet high, and is in so high a southern latitude as 73° S.

A. Z., Silver City.—The mode of formation of many rare minerals may be surmised, according to St. Claire Deville, by the reaction of volatile fluorides on vapor of water and oxygenized compounds; thus occasioning mutual decomposition and exchange of elements. As an example may be instanced the fact that volatile fluoride of aluminum acting on boracic acid will cause the production of oxide of aluminum (corundum, which, when crystallized and transparently-colored, forms the ruby and sapphire) and fluoride of boron.

Peripatetic, Santa Cruz.—We suspect the black mineral described by you as found in your mountains is *Lepidomelane*, which has been shown by Professor Houghton to resemble black mica. The latter-named mineral abounds in the granite of the Santa Cruz mountains.

Bibulous.—The bubbles formed by pouring water into a glass tube are owing to the formation of a cavity at a point where the descending water meets the fluid underneath; the cavity closing up, the bubbles form from the motion imparted to the surface.

C. G., Oro Fino—Your query will probably be answered in our next.

Commissioner Raymond was at Dalles, Oregon, on the 13th inst. He was about to visit the mines of Grant and Baker counties, after which he would proceed up the Columbia on his way to Idaho and Montana Territories.

The Loud-Cole Patent Case.

Many of our readers will recollect the paddle-wheel case, before the Patent Office, several months since, wherein Senator Cole figured as inventor, apparently at the expense of Mr. Alfred C. Loud, of this city. It appears that Mr. Loud invented an improved steamboat paddle-wheel, in August, 1868, and went to Washington the next October to secure a patent for the same. While there he very naturally called on Senator Cole, who, seeing he had a valuable invention, quite as naturally took a very deep interest in it. The result was that a patent was speedily allowed, and an arrangement subsequently made between Loud and Cole that the latter was to spend some $10,000 in experiments, to further improve the invention, and secure foreign patents for a one-quarter interest in it.

To give time for this, the patent was allowed to remain in the "secret archives" of the Patent Office—the last fees remaining unpaid; while Messrs. Loud and Cole were engaged in completing their experiments in New York. During the course of these experiments, in which some material modifications were made in the invention, Mr. Loud received letters from San Francisco, calling for his presence here; and it was agreed that Mr. Cole and their engineer should continue their studies and experiments during Mr. Loud's absence, and when all was completed, new patents were to be taken out, and a one-quarter interest conveyed to Mr. Cole; but Mr. Cole was to proceed with the foreign patents during Mr. Loud's absence. Mr. Loud also continued his experiments on his voyage to San Francisco, and arrived at certain important results, which induced him to hurry back overland, five days after his arrival here, to communicate his discoveries to Mr. Cole. They met in Washington, and Mr. Loud was somewhat surprised to learn from Mr. Cole that he (Cole) had arrived at the same improvements himself, for which he had made application for a patent in his own name! On a further conversation, Mr. Loud was still more surprised to learn that Mr. Cole had also taken out his (Loud's) papers, which had been filed in the secret archives, paid the last fees, and made the papers public; and all this against special instructions to the contrary. The chief clerk of the Patent Office testifies to the manner in which Mr. Cole obtained the papers, in a manner anything but creditable to Cole if incontrovertible.

We condense the above facts from the sworn and published testimony of Mr. Loud, taken in the case of interference which grew out of the transaction, in April, 1869. A judgment in the matter was rendered August 2d, deciding the question of priority of invention in favor of Mr. Loud. In making his decision, the Commissioner stated that nearly all the evidence was on the side of Loud; and that to arrive at any conclusion adverse to his claim, "must be accompanied by a decision that all the witnesses referred to are guilty of swearing to outrageous lies, thereby deliberately and shamelessly committing perjury. Such a decision I cannot make, in the absence of any proof to sustain the same."

The Microscope and the Silk-grower. Mons. Comalia has extended the use of the microscope beyond the examination of the eggs by its means, for the purpose of throwing out those showing certain corpuscles which are the sign of disease. He examined the *moths themselves* before they deposit their eggs. Those which are tainted with the disease are rejected, and thus the exclusion of diseased ova made more sure; for it has been found that the ova from a diseased female do not invariably exhibit the corpuscles, although they must necessarily be tainted.

Returned.—Mr. H. J. Booth, of the Union Foundry, has returned from a brief trip East.

The California Sugar Refinery---New Process.

The California Sugar Refinery, located on Brannan street, corner of Eighth, commenced operations in April, 1865, in a wooden building, with a capacity for manufacturing 25,000 pounds of white sugar per day. In 1868 they put up an additional building of brick, 60 by 50 feet, increasing their capacity to 40,000 pounds per day. During the past year they have erected a large brick building, 85 by 100 feet, and five stories high, with a brick boiler room 38 by 50. The capacity of the present works, when they are fully completed, will be 142,000 pounds per day. The engine, which is a magnificent one, fitted with every modern appliance, force pump, air pumps, etc., for the new works, was built at the Vulcan Foundry, and may be classed among the finest work of the kind ever turned out on this coast. The engine cylinder is 24 inches diameter, with a 48-inch stroke, and turns a mammoth driving wheel 18 feet in diameter with a 21-inch face. The pump is double-acting, with three feet stroke. There are two air pumps in use at this Refinery.

When all the machinery is in place, eight tubular boilers will be required for making steam, each of which will be 60 inches in diameter by 16 feet in length. As yet, however, four only are in place. The old building is to be employed exclusively for filtering and re-burning the bone-black employed in the filters—leaving the entire area of the new structure for the other portions of the process. Two vacuum pans are employed, one of which has a capacity of 60,000 pounds, the other 40,000. The foundation of the new structure was laid by Claus Spreckles, the President of the Company, on the last day of 1868. Its cost has been $250,000. These works are at present under the immediate charge of Mr. Peter Spreckles, a brother of the President who is now absent in Europe.

The locality of the works is most particularly favorable for the business, which requires much heavy transportation, the rear portion being located directly upon Mission Creek, to which, as soon as the contemplated improvements in Mission Bay have been completed, vessels of eight feet draught of water will have free access.

A New Process.

One of the most interesting things connected with this enterprise is the fact that an entirely new process is employed here for converting the sugar from its granulated state into the loaf or crushed condition in which it goes into the market. This process is an invention patented through the Mining and Scientific Press Patent Agency, by Mr. Claus Spreckles, about two years since, and as yet employed at these works only. By its use a great saving is effected in both time and labor.

By the ordinary process the raw sugar is first dissolved in water, then filtered through bone charcoal, then boiled in a vacuum pan,—that is, in an air-tight boiler from which air has been pumped until the sugar will boil and throw off its water at a very low temperature, say 85°,—until it has arrived at just the condition in which the greatest amount of sugar can be crystallized out of the syrup. It is then placed in a centrifugal machine—a kind of perforated wire basket, which operates as a strainer, allowing the syrup to be forced out by centrifugal action, while the sugar is retained.

Up to this point all manufacturers pursue about the same course. In the ordinary way, the sugar thus separated from the syrup, is placed in molds—sugar-loaf-shaped—where it gradually hardens, so that the mold can be inverted, when the small remaining amount of syrup drains off, after which the loaf is removed from the mold and placed in a moderately warm room for a few days to harden, when it is taken to another room, called an oven, where the temperature is kept up to about 140°; from the oven the loaves are taken to a breaking machine, where they are reduced into different degrees of fineness for the market, in which it is sold as crushed or pulverized sugar.

About fourteen days' time and a large amount of manipulation and heat is required in the ordinary way, for that portion of the process between the centrifugal and the breaking machine. All this work is done at the California Refinery, under Mr. Spreckles' patent, in four days' time, with a proportionately decreased amount of handling and heating. The sugar, as it comes from the centrifugals, is pressed into bricks or slabs, 12 by 14 inches superfices, by three inches thick. These slabs are dried like bricks in a common atmosphere for 24 hours, then go to the "oven" for 24 hours longer—then to the breakers. The saving effected by this simplification of the old process is about three-quarters of a cent per pound. When these works are fully under way, the daily saving by the use of this improvement will exceed $1,000 per day. If this saving was applied to all the sugar consumed in this country it would amount to the enormous sum of $6,000,000 annually! Few inventions have been brought out in any country or age which have been able to effect greater savings in human industry than this. We understand that negotiations are now pending for the introduction of this process into a large establishment in New York.

The Overland Monthly.—This popular magazine, the pet of California readers, and the envy of Atlantic publishers, is out for September. The table of contents, which is all we have had time to read, is enough to make any man's mouth water—at any rate if he has ever seen a number of the magazine before,—that is, of course, if he is a San Franciscan. We fancy that we can always recognize one of Bret Harte's articles by the title. There seems to be something suggestive in it. We think that the publication in the hands of its present proprietor, Mr. John H. Carmany, fully maintains its early reputation. We promise ourselves as usual a couple of hours of the rarest gown and slipper enjoyment with it.

Map of the San Joaquin Valley.—Mr. Gensoul, of the Pacific Map Depot, 511 Montgomery street, has laid upon our table a new and most useful map of the San Joaquin Valley—a portion of the State to which, just at this time, a large share of attention is being drawn. This is by far the most complete map of that section which has yet been published. It was drawn by M. Walthall, chiefly from the latest authorities, but in part from actual surveys, and lithographed by Britton & Rey. The lines of the Western Pacific Railroad are marked out, and the proposed routes of the Stockton and Copperopolis, Stockton and Tulare, and Southern Pacific, are also given. A tabular statement is given of the names, number of acres, dates of patents, final survey and number of survey of the different Spanish grants embraced in this section of the State, and the names of the parties to whom they were confirmed. The whole is done with much care, and with an evident regard for accuracy.

The Sierra Chispa.—There was such an immense rush to see this $30,000 nugget when exhibited at an assay office in this city, that the keeper was obliged to withdraw it in order to proceed with his business. It ought to occupy a prominent place in the coming Fair.

Minerals for exhibition at the Mechanics Fair sent to our care, prepaid, will be duly exhibited and returned as the owner may request.

The Humboldt Anniversary.

On the 14th of September next a century will have elapsed since the birth of Alexander von Humboldt,—one of the most remarkable men who ever lived. Although by birth a German, his love of science and passion for travel made him eminently cosmopolitan. His memory is revered and his name is cherished wherever science is known. No tourist of any note who goes to Berlin fails to make a visit to the unpretending village of Tegel, where repose the ashes of the great naturalist, by the side of his mother, his brother and his sister; and where an inscription on the pedestal of an unpretending column tells the visitor that he is contemplating the last home of a family, which not only Germany, but the whole world delights to honor. Here, just without the limits of the gay city of Berlin, after a long and active life, spent in investigating the secrets of nature, in both the old world and the new, this truly great man came to spend the evening of his days, near the same great forests, the same green hills, and the same beautiful lake, which he so much loved and admired in his childhood years.

To-day, in all the principal cities throughout the civilized world, we hear of preparations being made to celebrate the anniversary of his birth; and San Francisco will not be behind her sister cities in paying her tribute to departed genius and worth. His countrymen in this city, who are very naturally proud of the man who, by securing such world-wide fame for his services in behalf of the cause of science, has added luster to the German name, are determined to do justice to his memory. Several meetings have been held, at one of which no less than twenty-eight German societies were represented. It has been decided that the general festivities of the day shall be held at the City Gardens. A procession will be formed at eleven A. M., and after marching through some of the principal streets, will proceed to the gardens. Mr. Leo Eloesser has been selected as the poet for the occasion, and Mr. Emil Niemier as the reader. The speaker in English will be Prof. Blake; in German, Rev. Dr. E. Cohn. Invitations will be extended to consuls, pioneers, scientific associations, and others. A grand concert and ball will take place in the evening, and the gardens will be brilliantly illuminated. It will be an occasion in which our citizens generally should participate. From the activity displayed on the part of those who have the matter in charge, there is no doubt that the affair will be a decided success, and a display every way worthy of the occasion.

France and her Future.—Napoleon III has never done an act which will tend more to his real popularity, and to the permanence of his dynasty, that his late ready acquiescence in the expressed will of the French nation, in relation to governmental reform. The Emperor has now assumed the character of a constitutional sovereign, and under circumstances which encourage the hope that revolutionary changes are done with in France, forever. The movement, quiet and peaceful though it has been, is one of the most important which has ever occurred in French history, and one fraught with immense consequence to the whole civilized world. Industry and commercial progress have now a guarantee of uninterrupted progress in France; and her people have entered upon a career of national importance, without parallel in any previous stage of her history.

Giant Powder *vs.* Fish.—The Nevada *Gazette* says that a party which recently went to the upper waters of the Yuba on a fishing excursion, not finding the sport with hook and line sufficiently exciting, exploded a small charge of giant powder in the water. The effect was astonishing—all the fish in the immediate vicinity, large and small, being instantly killed.

Tobacco De-incotinized.

We give the following extracts for the benefit of smokers; hoping, however, that the effect will not be to make them smoke the more. But perhaps there is no great danger of that; for, as we understand it, the antidotes to tobacco which are mentioned below, serve to prevent the agreeable,—as well as the *dis*-agreeable,—consequences resulting from its use. If that be the case, the true lover of the "weed sublime" will "more admire, by far, its naked beauties"—and will eschew all such trashy concomitants as sassafras bark and tannin; though the boy in his teens, who desires to be thought manly, and who to that end chews liquorice, in order to give his saliva a reckless and dissipated color, will doubtless hail with delight the information herein contained and regard it as a perfect god-send.

Dr. T. Williams (*Chicago Medical Journal*) recommends smokers to place in the bowls of their pipes a little powdered tannin. The smoke,—he says,—"will thus be deprived of its characteristic aroma, and all the vaporized nicotine, which is the intoxicating principle. At first the smoke will be entirely free from all taste and smell of tobacco; but as the sponge becomes charged with the nicotine, the odor will reappear. By changing the sponge frequently, the smoker may indulge in his habit as immoderately as he pleases without injurious effects."

Dr. Thompson of Nashville, Tenn., having been told that the dry bark of sassafras, if mixed with the tobacco would prevent unpleasant effects from smoking, tried the experiment, and reports as follows:—"I tested this repeatedly by smoking a strong pipe until my head was very disagreeably impressed, and then reloading with a mixture of sassafras bark;—a few puffs of which latter invariably dispelled the unpleasant sensations."

Dr. Shelby, of Huntsville, Ala., quotes the above in a communication to the *Boston Journal of Chemistry*, and says:—"I have again and again, in my own person, verified the statement of Dr. Thompson; but have generally used the *oil* of sassafras, putting a few drops on the end, and allowing time for its absorption and diffusion through the cigar. * * In making the experiment with the pipe, it is best to cover the oiled portion of the tobacco with some that is dry, or it will not burn so readily; or, if a blaze is used to light it, it will burn too rapidly, and prove pungent and disagreeable."

Coöperative Ship-Building.—An effort is being made to establish an extensive coöperative ship-building enterprise at some convenient point on Puget Sound. Six large ship-yards have already been permanently established there, and evidence is fast accumulating to show that the locality is one of the best for that business in the Union. Capital and skilled labor is already being transferred thither from New England, and the prediction is ventured that ere long Puget Sound will become one of the most important ship-building localities in the United States. However this may be, it is gratifying to learn that American ship-building is reviving everywhere. A slight modification of the tariff on ship-building material, which will probably be effected at the next session of Congress, will still further quicken and increase this important branch of our national industry.

Mr. E. P. Hicks, owner of the patent right for this coast for Dickason's patent self-opening and closing farm gate, has just returned from an extended trip through Northern California and the State of Oregon. We understand from him that the right for nearly all that section has now been disposed of. The gate is highly recommended on good authority, as will be seen by advertisment on the last page of this issue.

Familiar Science.

Why do Cats' Eyes Shine in the Dark?

Every body is familiar with the fact that the eyes of a cat shine in the dark;—but it is not so generally known that this phenomenon is almost or quite as strongly developed in various other animals, as the dog, the sheep, the cow, the horse; also several species of serpents and some insects. Various theories have been suggested to account for these phenomena, since attention has been, in later years, more especially turned to the investigation of such subjects.

This shining was at first attributed to a principle of absorbcuco, as diamonds are supposed to throw out the light in a dark room which they have accumulated in the sunlight. Phosphoresceuce has also been suggested as the possible nature of such light. It was also assumed that this accumulation or phosphorescence, served as an aid to those animals that possessed it, by assisting them to see and guide themselves, for a time at least, after the light of the sun had passed away. These explanations and assumptions were deemed sufficiently plausible until the science of anatomy revealed the fact that the mechanism of the eye when carefully considered, would not admit of such conclusions. On reconsidering the question, observers discovered that the eyes of cats never shone in intense darkness—that the phenomena is perceivable only when the eye of the observer receives a certain degree of light from surrounding objects or openings for the entrance of outer light. Hence the eye of the cat and other animals shines simply by reflected light, as from a mirror. It is also now known that neither a cat nor any other animal has a particle of vision in absolute darkness. The greater or less power of vision in animals is mainly due to the power of contraction and expansion of the pupil; but in part also to the sensibility of the retina. The less light the eye of the observer receives, (always supposing it to receive enough for faint vision) the more is it sensible to that which the eye of the cat reflects. These conditions of the phenomena, now fully ascertained, reduce the once supposed phosphorescence of the eyes of a cat, to simply the reflection of light by a shining object.

The Dark Spots on the Sun are not really dark—they are only apparently so by comparison. They are supposed to be aggregations of gaseous matter less highly heated, and consequently less luminous, than other portions of the sun's luminous atmosphere. These spots are dark, when seen on the sun's surface, just as the flame of a candle, or any other, even the brightest artificial light is dark when held between the observer and the sun. The spots which are dark while in the center of the sun's disk, become red, when seen upon the edges of that luminary during a total eclipse. Observations confirmatory of this, will doubtless reach us from the observers of the late eclipse, whose attention was especially directed to such examination.

Fleas on Dogs.—Fleas and other vermin have a "life and death" dislike to oil of any kind. Its presence in any considerable quantity closes their breathing tubes, and at once suspends animation. Place even the smallest quantity of oil so that it will completely coat an insect and it will speedily die. A dog may readily be freed from fleas by rubbing common olive or sweet oil into his coat, so as to saturate the hair quite to the skin. Let it remain for half an hour, then wash away the oil with warm soap suds. A small quantity occasionally brushed into the hair of a dog will keep the fleas from making a lodgment there. Matrons with large families of very small children, may find it to their advantage to take this hint.

Why the Hair Sometimes Wont Grow. People generally seem to think that by the use of hair-oil, hair may be made to grow anywhere, when the truth is that hair grows like a plant. It has its root and stalk; the stalk may be broken off frequently, and yet a new shoot springs up, perhaps more vigorous than the first. This process may be, and often is, repeated many times during the life of the individual. Fever, erysipelas of the scalp, and many acute diseases, are followed by the breaking off of the hair, and temporary baldness. But the hair-bulb still remains uninjured, and a new growth is sure to follow. This new growth may be hastened by stimulation of the scalp, as by friction, irritating washes, etc. But when from any cause the roots of the hair die, there is an end, for all time, to the growth of hair in that soil. By no art or device can a new crop be sown or transplanted. Hair-oil is as useless as if applied to the sole of the foot. We cannot always tell when the hair-bulbs are actually dead without the trial of means to invigorate them; but there is no doubt that incurable baldness is sometimes hereditary, and that it frequently follows some constitutional diseases. On the contrary, falling of the hair after acute diseases, or earlier in life than usual in the family descent, or any unusual trouble of body or mind is, almost without exception, temporary.—*Hearth and Home.*

The Soil Breathes.

Does the soil breathe? Certainly it does, just as you do. A few years since, if one asserted that trees had lungs and breathed, he would have been held to an argument to prove it; just a few years earlier nobody would have believed that a fish's gills, and the leaves of a tree, and the lungs of a beast, all performed the same office, that of ærating the blood or sap. The soil breathes. How does it breathe? Its circulating fluid, the blood of the soil, is water; this comes to it from the air, and is already ærated. True, but this soon loses its gases by contact with the soil, just as the arterial blood fresh from the lungs, loses its oxygen when passing its circuit in all parts of the body. The blood comes back to the lungs for more oxygen, but the blood of the soil cannot do this, so we must let the air in to come in contact with it. We cannot here explain the working of the air in the soil, but would thus briefly enforce the necessity of stirring the soil during droughts as deeply as practicable, not to interfere with the roots of growing plants, and those of previous culture, so that a deep light soil shall invite a free circulation of air beneath the surface. Hot air, the moment it passes beneath the surface becomes very moist, from the water which it originally contained, and it deposits it, thus not only ærating the soil, but adding to its moisture. Cold air can hold but little moisture, but hot air dissolves an immense quantity, which it deposits when it cools, or on cool surfaces. Who has not noticed of a winter's day, a locomotive leaving behind it a snowy cloud of vapor, like a comet's tail, often floating for minutes after the train has passed? Think of this, and watch the steam car on a day like those of midsummer, the hot breath, just as full of water as in winter, is puffed out into the eye of the sun, and not steam enough shows to make a shadow, so quickly is it absorbed by the air.

To Detect Malarious Districts.—The *Engineer* is authority whereby people seeking rural homes for the summer may satisfy themselves—and that with far more certainty than from the assertion to the contrary of interested property-holders—concerning the existence of fever and ague causes. In regions subject to miasmatic diseases, organic matter is found in the greatest abundance in the form of spores. The identifying of these spores depends on the property of sulphuric acid to set free carbon from its combinations in organic substances. If, then, a watch glass containing sulphuric acid be exposed to the atmosphere of a suspected region, its surface will become blackened with a rapidity depending upon the malarial tendencies of the place.

What Would Occur if the Earth Should be Stopped in its Orbit.—If the earth should be stopped in its orbit, it would begin to fall straight towards the sun. As it approached more nearly to that great source of heat it would soon reach a point where the temperature is as high as two hundred and twelve degrees, and then all the waters of the ocean would be evaporated. As it drew still nearer, the rocks would be melted, and afterwards they also would be evaporated. Before it reached the sun this solid earth would be converted into a vast volume of red-hot gas, which, when it fell into the fiery atmosphere of the sun, would merely produce blasts of wind at the point where it struck outward in all directions.

WATER FOR A MILL SUPPLIED WITH SNOW.—The *Inland Empire* of August 19th, says: Bassett's mill, well up on White Pine Mountain, is run altogether on snow water. During last winter large drifts of snow were housed in with pine boughs high up on the mountain, and the same is now hauled to the mill in wagons, to be used for generating steam which keeps the machinery in motion. The snow is dumped into a large vat where the exhaust pipe discharges, and in this way it is melted for use in the boilers. About three tons of snow are daily consumed in running the mill, and the supply on hand is said to be ample to last until winter again sets in.

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For **Dysentery** or **Diarrhœa**, but one mild dose is generally required.

For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins**, they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.

For **Dropsy** and **Dropsical Swellings** they should be taken in large and frequent doses to produce the effect of a drastic purge.

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An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.

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WHOLESALE AND RETAIL
Ale, Porter, Wine and Liquor Merchants,
912 Market street, San Francisco.
☞City and country orders promptly attended to. Merchants, Shippers and Families supplied in large or small quantities. 3v19-3m

Farms and City Property.
C. H. WAKELEE & CO.,
601 California street, S. W. Corner Kearny street, buy and sell Farms and City Real Estate. Parties wishing to invest will find it to their interest to call on the . 13v18-3m

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's
Claims and Mill,
Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 3 0 feet. A force of thirteen men only are required to keep both mill and mine running regularly.

On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which fact goes to prove that a heavy deposit of ore was once contained in the croppings of these shutes, which, by all former and present theories of deep mine workings, came from below, indicating that when sunk upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.

This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.

The last level, 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $1 to $1 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.

Now I propose to sell two-thirds of this valuable property for $16,000, cash; and any party who desires, to purchase a property of this kind—which theory has proven that it requires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.

For any further particulars, direct by letter to Wm Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.
22v18tfqr WM BOSWORTH.

California Steam Navigation COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE
" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE.....
" CORNELIA.....CAPT. W. BROMLEY
" JULIA.....CAPT. E. CONCKLIN.

Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.
Office of the Company, northeast corner of Front and Jackson streets.
13v12 **B. M. HARTSHORNE, President.**

Metallurgy.

LEOPOLD KUH,
Assayer and Metallurgical Chemist,
(Formerly of the U. S. B. Mint, S. F.)
Office, No. 611 Commercial Street, opposite the Mint, San Francisco.
BULLION MELTED AND ASSAYED.
The correctess of which is guaranteed in every respect All kinds of Ore and Mineral tested, assayed and analyzed in the most satisfactory manner.
Refers by permission to W. C. Ralston, Cashier Bank of California; Messrs Pioche & Bayerque, Wm. M. Lent, John D. Fry, E. Cahill & Co., A. K. Grim, President Pacific Union Express Co.; John M. Eckfeldt, M. and R. U. S. B. Mint. Hale & Norcross S. M. Co., and the principal mining companies on the Comstock Lode. 25v17-tf

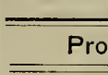
R. TAYLOR. WM. H. TAYLOR.
ROBERT TAYLOR & CO.,
METALLURGISTS.
SMELTING WORKS,
Twelfth street, between Folsom and Howard.
GALVANIZING.
Also, Anti-Friction, Alloys for Journals, Type and Stamping Metals, Tinners and Plumbers' Solder, Etc.
☞The best price given for the most rebellious or refractory ores. Ores and minerals assayed and analyzed.
ISAAC BLUXOME, Agent,
4v18-3m N. E. cor. Washington and Battery streets.

G. W. STRONG,
ASSAYER AND WORKER OF ORES,
No. 10 Stevenson street, near First, San Francisco.
Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms.
14v15qr.

Professional Cards.

J. S. PHILLIPS, M. E.,
CONSULTING ENGINEER,
Examiner of Mines, etc.,
423 Washington street.....San Francisco.
(Having had 33 years' experience in Europe and America) supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

GEORGE B. ELLERY,
Practical Mining Engineer,
TREASURE CITY,
White Pine.....Nevada.
2v19tf



DR. N. T. WHITCOMB,
Dentist,
No. 205 Third street, up stairs, San Francisco
Teeth filled with fine gold, artificial bone, and platina.
All Plate Work made and repaired of the best material, at the shortest notice, and warranted.
None cheaper and better on this coast—call and examine specimens.
North Beach and South Park cars pass the door.
3v19-3m N. T. WHITCOMB.

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to **331** Kearny street, west side, between Pine and Bush, San Francisco.
2tv18-1y

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
510 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California an Leidersdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

To Quartz Mining Companies.

To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR No. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—
One Steam Engine, 60 horse power, made by Burden, Brooklyn, New York.
Two large Boilers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift-Pump, 6 inches, of superior make and finish.
280 feet of 5 inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.
The Company having ceased operations intend selling off their effects as speedily as possible.
For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

Trades and Manufactures.

WM. BARTLING. HENRY KIMBALL.
BARTLING & KIMBALL,
BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers,
505 Clay street, (southwest cor. Sansome),
15v12-3m SAN FRANCISCO.

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
S. E. Corner of Mission and Fremont sts.,
6v14tf SAN FRANCISCO

SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
24v18-1m

J. J. JONES,
CARPENTER and BUILDER,
No. 324 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
7v18tf

W. C. CAMPBELL,
PATTERN AND MODEL MAKER,
No. **20** Fremont street, over Phœnix Iron Works, San Francisco.
Particular attention given to MODELS for the Patent Office Brands and Pattern Letters Cut. 4v18mtf

J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, **608** Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

Pacific Chemical Works.
SULPHURIC ETHER.
SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS.
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa, and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19 6m

HIBBERD, SANBORN & CO.,

South Point Mills, Berry Street,
Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.
6v19-3m

GIVEN AWAY.
To extend their circulation in California, the proprietors of
TILTON'S JOURNAL OF HORTICULTURE
Will send their Magazine (devoted to Fruit, Flowers and Vegetables)
FREE TO ANY ADDRESS.
Those parties desiring it, with a view to becoming subscribers if they are pleased with it, can address
TILTON'S JOURNAL OF HORTICULTURE,
7v19.3w BOSTON, MASS.

TRADE MARK.

New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece
Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

OCCIDENTAL

Insurance Company,

OF SAN FRANCISCO.

Cash Capital, - - - - - - $300,000

GOLD COIN.

Office S. W. corner of Montgomery and California streets.

Fire and Marine Insurance.

All Losses paid in U. S. Gold Coin.

CHR. CHRISTIANSEN, President
B. ROTHSCHILD, Secretary 20v17-3m

Pump Leather.

The attention of MINING COMPANIES, and others requiring a superior article for Hydraulic purposes, is invited to the heavy Oaked Tanned Pump Leather, manufactured and prepared expressly by the undersigned.

TRADE SANTA CRUZ TANNERY E. JONES & Co MARK.

Constantly on hand and for sale by
GRAY, JONES & CO.,
Depot of the Santa Cruz Tannery,
418 Battery St., San Francisco.
25v17-1y

Office of California Powder Works,

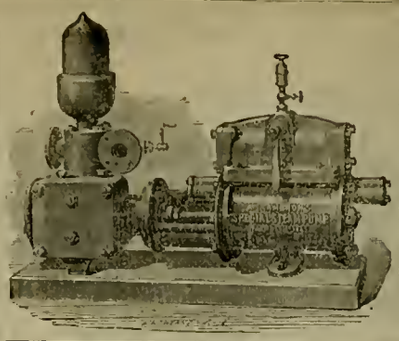
San Francisco, July 15, 1869.

NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

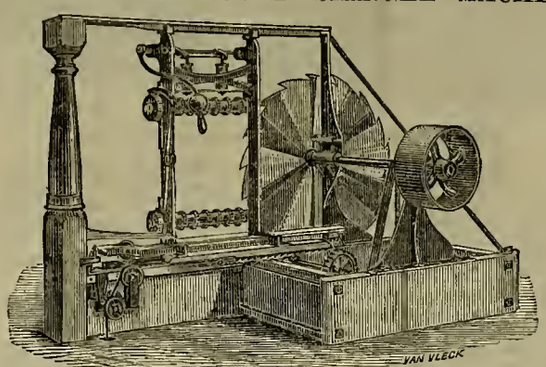
JOHN P. LOHSE, Secretary.
5v19-3m 314 California street



CAMERON'S
STEAM PUMPS.
PICKERING'S
Engine Regulators.
GIFFARD'S
INJECTORS.
MARINE
ENGINES.
SURFACE
CONDENSERS.

DAVID STODDART,
111 BEALE STREET.

HUNTINGTON'S IMPROVED SHINGLE MACHINES.



SHINGLE MACHINES CONSTANTLY ON HAND.
Steam Engines, Saw Mills, Lath and Picket Machinery, and Flax-Breaks,
MADE TO ORDER.
F. A. HUNTINGTON, Manufacturer,
8v8 1-1amfm 17 and 19 Fremont Street, San Francisco.

Rails, Newel Posts,

AND BALUSTERS,

Constantly on hand for sale, and shipped, together with all kinds of

STAIR WORK,

To any part of the coast. Practical workmen sent, when desired, to put up the same.

Work Warranted to Fit

by simply sending a correct ground plan of stairs, together with hight of story.

Wood-Turning and Scroll Sawing of all kinds promptly executed.

☞ Spanish Cedar, Walnut and California Laurel always on hand or sale.

Langland & Cameron,
STAIR BUILDERS,
309 Market street,
And 485 and 487 Brannan street,
SAN FRANCISCO.
16v16-1y

Wonderful Invention!—To Housekeepers!

NEW METHOD OF
WASHING CLOTHES
WITHOUT LABOR.

JOHN REIST'S Celebrated Patent Automatic
CLOTHES WASHER AND BOILER.

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S. Patent Office, November 9, 1868.

See its wonderful operation and you cannot do without it.

WM. FRIEL, Agent for San Francisco,
Dealer in Stoves and Tinware,
25v1-3m 67 and 69 Fourth st., bet. Mission and Jessie sts

MEUSSDORFFER,

HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL.

635 and 637 Commercial street.....San Francisco
125 J street.....Sacramento
Corner of D and Second streets.....Marysville
72 Front street.....Portland, Oregon.

Our wholesale House, 628 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 25v16-3m

HO TEAMSTERS!

CONTINUE TO

USE HUCKS & LAMBERT'S

CELEBRATED

H & L Axle Grease,

To which you have given so decided a preference for the last

FOURTEEN YEARS,

It is the only reliable article

IN THE MARKET

Every care will continue to be used to sustain the high reputation the H & L Axle Grease, has so long and justly attained.

☞ Be sure and ask for the H & L brand, and see that the

TRADE MARK H & L

IS ON THE COVER OF THE PACKAGE

NONE OTHER IS GENUINE.

FOR SALE IN EVERY STATE IN THE UNION.

International Hotel,

JACKSON STREET

BETWEEN MONTGOMERY AND KEARNY STS.,

SAN FRANCISCO, CAL.

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from $1 50 to $2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

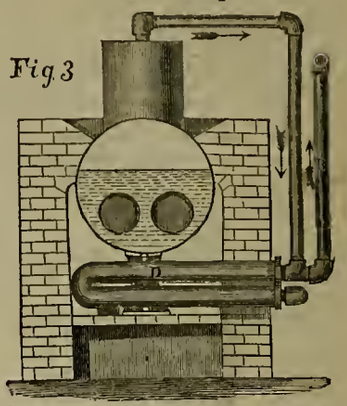
☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents

21v12 F. E. WEYGANT, Proprietor.

Important to every one using Steam for any purpose.

CARVALHO'S
Patent Steam Superheater

Fig 3



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1869.
"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after seven years of service.)
"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.
"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.
"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.
"Superheater saves not less than 20 per cent. fuel; no priming."

CROCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.
"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PAINTING ESTAB., Oct 4, 1867.
"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINENTAL OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.
"Superheaters give entire satisfaction, and we superheat to 55 deg—an increase of 200 deg."

CARBON MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.
"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.
"Superheater saves at least 25 per cent. in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.
"Superheater saves 25 to 30 per cent. in fuel; no priming."

CONTRA COSTA LAUNDRY, Oakland, July, 1868
"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. CO., Cal., August, 1868.
"Superheater causes a use of 40 lbs steam instead of 60 lbs.; use much less water, and there is a saving of fuel." (2 sets.)

SIXTH MECHANICS' INST FAIR, S. F. Sept. 4, 1868.
"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.
"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works better."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1867.

Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.
JOHN L. CONSTABLE, Engineer. 25v18tf

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,
— AND ALSO IN —
STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

A Long Desired Article

FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using

CAMILLE CHAMPOO,

which not only does away with the poor soap so offensive to use, and so injurious to the hair, but it cleans the head, strengthens and beautifies the hair, preserves the color and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERTON & LUELLING, 773 Mission street, San Francisco, Cal.

HEATHFIELD & BOGLE, Wholesale Druggists, 206 and 208 Battery street, San Francisco, sole Agents for the Pacific Coast. 24v18-3m

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the Press from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

For the Week Ending August 17th.

Process of Treating Ores with Copper-Amalgam by Means of Electric Currents.—Andrew L. Nolf and François L. A. Piocbe, San Francisco, Cal.—93,899.

Photographic Plate Holder.—Joseph Buchtel, Portland, Oregon.—93,669.

Rock-Drill Point.—Charlton H. Davis, San Francisco, Cal.—93,684.

Carriage Spring.—J. W. Gilmer and W. H. De Valin, Sacramento, Cal.—93,703.

Lamp-Burner.—Perry Prettyman, Paradise Spring Farm, Oregon.—93,744.

Steady Rest for Lathes.—James Brodie, San Francisco, Cal.—93,801.

Screw Propeller.—Frederick Wittram, San Francisco, Cal.—93,848.

Not the "Old Saw."—A hand machine saw, of eastern invention, on exbibition at Kirby's rooms, Battery st., is described by the *Herald* as follows: It consists of a frame about eight feet long, with an ordinary buck saw fixed at oue end, so as to run in a grooved saw-way, while a wooden rod attached to one end of the saw connects with a fly-wheel at the back of the frame, whicb is turned by two men. The logs rest on two wooden jaws beneath the saw, which are joined by a lever while the saw is at work. Each revolution of the wheel produces six passes of the saw. Both handles can be used by one man, or one can be taken off if needed.

Election.—George F. Bragg, J. C. Wilmerding, P. Weaver, P. Cadne and J. F. Lyne, were elected Trustees of the West Poiut Miuing Company, August 25th.

It is an excellent publication of the kind, and, nextto the Mining and Scientific Press of SanFrancisco, we regard it the best in the United States.—*Colorado Register, July 15th.*

Mining and Scientific Press.—This excellent periodical has been for many years the faithful chronicler of important events and a medium of valuable information to the miners of the Pacific coast.

It has constantly furnished a reliable record of the progress in the mining, mechanical and scientific branches of industry, and its contents have been particularly adapted to the condition and business of the Pacific Coast.

For its usefulness and valuable information it is worthy of the patronage of an intelligent public.—*Shermantown Telegram.*

Returned.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photograpus, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. Howland.

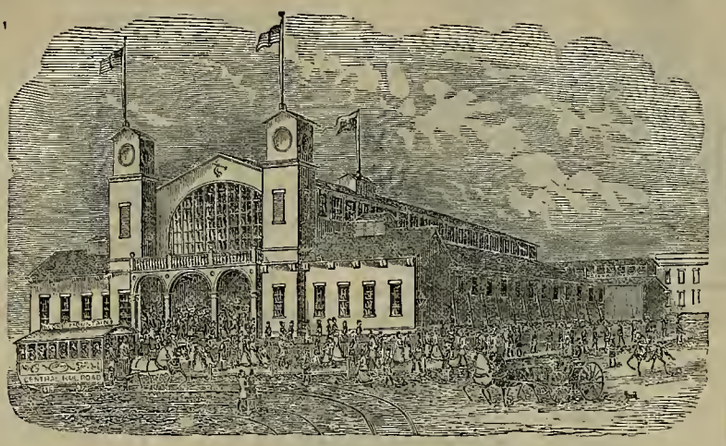
Co-Operative Union Store.—This is becoming one of the most useful Institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco 24v18-4w

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boeck, Sperino, and Dewilz Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18 3m

Asiatic Cholera.—The Strongest Proof of Intrinsic Merit.—Dear Sir: I ought to have acknowledged long ago the box of Pain Killer you had the goodness to send me. Its coming was most providential. I believe hundred of lives were saved, under God, by it. The Cholera appeared here soon after we received it. We resorted at once to the Pain Killer, using as directed for Cholera. A list was kept of all to whom the Pain Killer was given, and our native assistants assured us that eight out of every ten to whom it was prescribed recovered. It has proved an incalculable blessing to multitudes of poor people throughout all this region. Our native preachers are never willing to go out on their excursions without a supply of the Pain Killer. It gives them favor in the eyes of the people, and access to families by whom otherwise they would be very indifferently received. Believe me, gratefully and faithfully yours, J. M. JOHNSON, Missionary, Swatow, China.

The Pain Killer is sold by all Druggists and dealers in Family Medicines.
REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents aalm

Seventh Industrial Exhibition of the Mechanics' Institute.



Opening Day, Tuesday, September 14th.

The Board of Managers of the Seventh Industrial Exhibition of the Mechanics' Institute announce to the public that the Fair Pavilion on Union Square will open on Tuesday, September 14, at 11 A. M., with the usual ceremonies.

The success of the last Fair was beyond the expectations of the Managers, and the satisfaction to the public was acknowledged by all. In the coming Fair, numerous additional attractions will be presented. Applications for space to exhibit have been received from foreign countries and the Eastern States, and the Managers confidently predict an Exhibition never equalled in California. Steam power will be furnished necessary to drive all machinery.

The Pavilion has been improved in many respects, and now covers an area of 90,000 feet. A new gallery has been erected, and additional decorations will be employed. The Pavilion at night will be illuminated by 1,300 gas jets, presenting a magnificent spectacle.

A celebrated band has been engaged for the entire period of the Fair.

The restaurant and refreshment department will be in competent hands.

Admission:—Season ticket, admitting a gentleman and lady, $5; season ticket, admitting single person, $3; single ticket, 50 cents. Children, half price.

A. S. HALLIDIE, President.

Mechanics' Fair Daily Press---Fourth Volume.

Spicy and Interesting Sheet---The best Advertising Medium ever offered in San Francisco.

Eight pages, profusely illustrated, and furnished free to every Exhibitor and Visitor during the season of the Fair—from four to five weeks. Copies sent abroad to friends everywhere, containing description of the Fair.

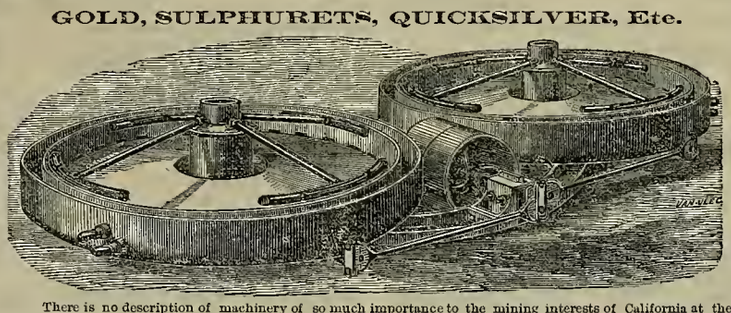
Secure your space and hand in your Advertisements early. Advertisements Engraved to order, or set in fancy type, to suit patrons, who will be rendered all assistance desired in getting up their notices. Orders received through agents or at the office.

Our three previous volumes have given patrons the best satisfactiou of any advertising medium on the coast. *We have the exclusive privilege for newspaper advertising in the Fair.* DEWEY & CO., Publishers, 414 Clay street.

HUNGERFORD'S IMPROVED CONCENTRATOR,

FOR SAVING

GOLD, SULPHURETS, QUICKSILVER, Etc.



There is no description of machinery of so much importance to the mining interests of California at the present time as that for the separation of sulphurets. Many machines have been tried and abandoned; and none seems to meet the requirement of the mining interest so well as that now patented by Mr. Hungerford, which is an improvement on the well known Hungerford & Prater Concentrator, with which his name is already so familiar.

RECOMMENDATIONS.

San Francisco, October 19th, 1868.

Mr. M. Hungerford—Dear Sir:—We have had twelve of your Concentrators at work at the Oneida Mine, Amador county, for about six months. They give entire satisfaction. They are strong and substantial, requiring, thus far, no repairs, and do their work thoroughly and effectively. At a recent clean-up of four of them, I found that in four weeks' time we saved about $500 in free gold, besides the sulphurets, or not far from one dollar per ton on the entire crushing of the ten stamps connected with them. In my opinion, it is for the interest of every quartz mill to have your machines. Yours, respectfully, GEORGE PRINGLE, Supt. Oneida Mine.

Office of the Oneida Mining Company, Jackson, May 13th, 1868.

Mr. Moroan Hungerford—Dear Sir: In regard to the four Hungerford Concentrators that I bought of Messrs. Goss & Lamhard, last month, I will say that I put them up in the Oneida Mill soon after I arrived here, and find that they save sulphurets well and clean, and work to my entire satisfaction. I have tried many other Concentrators, but these stand up and work better than any others I have used. I have ordered Messrs. Goss & Lamhard to make eight more for me as soon as possible. Very truly yours, JAMES MORGAN.

Bio Oak Flat, May 25th, 1868.—Mr. T. W. Mulford—Dear Sir: I have used two of M. Hungerford's Concentrators in the Rattlesnake Quartz Mill at this place, and find that they work full as well as they are represented to do. E. M. SMITH, Superintendent.

A full description of the principle and mode of action of this Pan is described in circulars, which will be forwarded to any party who may desire them.

The Hungerford Concentrator has only to be seen to be appreciated. No millman will use any other kind after he has tried that. They are in active operation in mills throughout the State, and give perfect satisfaction.

It should be borne in mind that Mr. Hungerford is the

Original Builder and Maker of the Celebrated Prater Concentrator,

and his name should be sufficient guarantee to warrant the public in examining his new Machine before purchasing elsewhere.

In future these Pans will be manufactured by GODDARD & CO., at the Pacific Iron Works, San Francisco, which is a guarantee that they will be built in the most substantial manner.

These Pans may be seen at the PACIFIC IRON WORKS, First Street, near Howard, San Francisco.

Address, M. HUNGERFORD,
9v19-2t San Francisco, Cal.

New Advertisements.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.

THOMAS MOONEY, President.
August 2, 1869. 6v19-1m

To Let—Room 18 by 36 feet, second story, 414 Clay street. Rent cheap.

ENGRAVING ON WOOD DESIGNING AND ENGRAVING on wood and for electrotype cuts of every description, done by superior artists at the office of the Mining and Scientific Press. Fine Cuts made for Book and Newspaper Illustrations, and for Fancy Labels for printing in various colors; Monograms, Seals, etc., etc. Prompt execution and reasonable prices.

DEWEY & CO.,
No. 414 Clay street, S. F.

CALIFORNIA FILE MF'G CO.

No. 437 Brannnn Street,
Between Third and Fourth, San Francisco.
W. WUSTHOFF, L. KRAMER, M. HARRIS. J. BURKE.

NEW FILES OF EVERY DESCRIPTION
ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.
REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19 qr

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel,

MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.
13 and 15 Fremont street, near Market, San Francisco.
10v1qr

The Excelsior Force Pump.

For all Purposes the Best.

ALL PUMPS WARRANTED.

BRITTAN, HOLBROOK & CO.,

AGENTS,

111 and 113 California St.,

SAN FRANCISCO.
9v19-2m

Pacific Mail Steamship Co.

For New York, via Panama.

FARE GREATLY REDUCED.
CABIN.....$100 | STEERAGE.....$50

LEAVE WHARF, CORNER OF FIRST AND Brannan streets, at 11 o'clock A. M. on the 9th, 18th and 30th of each month (except when either date falls on Sunday, then on the Saturday preceding) for PANAMA, connecting (via Panama Railroad) with one of the Company's splendid steamers from ASPINWALL to NEW YORK.

Steamer leaving San Francisco on the 9th touches at Manzanillo. All touch at Acapulco. Connections are expected to be made by steamer of the 9th for Central and South America; 18th, for St. Nazaire, France, and Southampton, England.

August 30th—MONTANA..... Capt E. S. Farnsworth, Connecting with ARIZONA, Capt. Maury.
September 9th—COLORADO.....Capt. Wm. H. Parker, Connecting with ALASKA, Capt. Gray.
September 18th—SACRAMENTO.....Capt. W. H. Hudson, Connecting with HENRY CHAUNCEY, Capt. Connor.
September 30th—GOLDEN CITY.....Capt Wm. F. Lapidge, Connecting with ARIZONA, Capt. Maury.

Passengers berthed through. Baggage should be checked through. One hundred pounds allowed each adult.

☞Only two classes of passengers are now carried—Cabin and Steerage. All cabin passengers entitled to same fare, attention and privileges.

An experienced Surgeon on board. Medicine and attendance free.

Through tickets sold to Liverpool, Queenstown, Southampton, Bremen, Brest, and Havre, via New York.

Persons wishing to send for their friends in Europe can procure orders for passage to San Francisco, with an advance of money, if desired.

No Freight will be received on board after 2 P. M. of the day prior to the steamer's departure.

FOR JAPAN AND CHINA.

Steamers leave on the 4th of every month, punctually at noon, for YOKOHAMA and HONGKONG, connecting at Yokohama with the Company's Branch Line for SHANGHAI, via Hioga and Nagasaki.

September 4th—JAPAN, Capt. J. H. Freeman.

For passage, freight and all other information, apply at the Pacific Mail Steamship Co's office, corner of Sacramento and Leidesdorff streets.

OLIVER ELDRIDGE, Agent.

MAGAZINES.	Per An.
Harpers	$ 4 00
Atlantic	
Godey	
New York Ledger	
Blackwood	
Hours at Home	
Good Words	
Peterson's	3 00
Arthur	
Lady's Friend	
Harper's Weekly	5 00
Chimney Corner	
Literary Album	
London Society	6 00
All the Year Round	
London Ill. News	15 00

W. E. LOOMIS,

News Dealer

AND STATIONER,

Southeast corner Sansome and Washington streets,

SUPPLIES ALL

EASTERN PERIODICALS

By the Year, Month or Number

Register your Letters containing money addressed to us, or we can not be responsible. Remittances by Express must be in packages, prepaid. When practicable, it is best to remit by draft, or order, on some San Francisco bank or firm.

Resources & Developments

THE farmers throughout the State are busy in harvesting and threshing their grain, and hauling it to various points of railroad and steamboat connection with this city. The terms now offering are very fair, and with the relief to the money market elsewhere noted, we may reasonably look for an increased activity in moving the crop, which is now conceded by all to be much the largest ever harvested in the State. Many who have completed their harvesting are already burning off the stubble and plowing for the next year's crop.

In mining matters a much better spirit prevails between employés and employed than existed a few weeks ago. The miners generally are doing well, and large amounts of bullion are constantly arriving in this city. The labor question in San Francisco is still quite unsettled. The opinion seems to be gaining ground, however, among the laborers themselves that the high price of labor and short hours of work have been carried to too great an extreme. A healthy reaction is evidently in progress, which it is to be hoped will be satisfactory to all, and result in the re-establishment of activity in every department of business and industry.

THE WOOLEN MILLS.—The agent of the Pacific Woolen Mills denies the statement that there has been any intention of stopping those works, and says that on the contrary, the Pacific Railroad is daily opening up new markets for their goods in Utah and other territories, where their goods have not heretofore been called for. This statement is most gratifying. Long may the spindles continue their work.

SASHES AND BLINDS.—Messrs. Hoadley & Co. are building a large sash and blind factory at Nevada, which, says the Nevada *Gazette*, in connection with the general lumber business carried on by that firm, will soon give employment to 300 men. It is only by such and similar establishments that the prosperity of our mining towns can be kept up and increased. Mining alone will not, cannot do it.

VALLEJO seems to be quite an important locality just now. The tenth or eleventh ship for the season is now loading at that port. A foundry is being erected there, with which a large plant of machinery will be connected. Half a million of dollars will be expended there during the ensuing year, in improvements by the Cal. Pac. Railroad Co., and the government will spend a full million during the same time in permanent works at Mare Island. An important discovery of most excellent building stone is said to have been recently made near Vallejo.

COAL AT HAYWARDS.—The search for coal, near Hayward's, by boring, has been resumed at the place where an open shaft was commenced last summer.

SLATE WORKS.—Copperopolis, it is said, bids fair to regain her former prosperity, through the medium of her mines of slate. Large quantities of this material are now being taken out at a point just west of Copperopolis and hauled to Stockton, from whence it is shipped to this city in the shape of tiles for roofing or ground to impalpable dust. There is one good thing about slate—at least it has no mining risks to assume, nearly every day's work being made to pay as it goes. They are also finding good slate in western Calaveras, at which point it is said the slate excitement almost equals some of the gold fevers.

CALIFORNIA CIGARS.—Large orders for California cigars are being received from Salt Lake and Montana, since the opening of the Pacific railroad. Orders have also been received from New York, and large shipments went forward on the last steamer.

SALMON PACKING.—Some of the salmon fishers on the Sacramento have had a large boat built in this city with a house upon the deck in which the fishermen can live, the year round, and change their locality as the fish shift. Much time and expense of seeking nightly shelter will be saved by this arrangement.

BUSINESS AT TUOLUMNE CITY, and on the river, is said to be quite brisk at the present time. The streets of the town are crowded with teams hauling grain to market. The river carries four feet of water up to that place, and steamers as large as the Empire City have no trouble in making regular passages and good time. They are always loaded with down freight.

A NEW STEAMER, called the "Dover," has recently been built by the Cal. Steam Navigation Co. for the trade of the upper San Joaquin. She is already in service, aiding to "move the grain crop."

SOMERSVILLE, CAL., August 25th, 1869.

MESSRS. DEWEY & CO.—Dear Sirs: Allow me to return you my thanks for the very able manner in which you have conducted the business entrusted to your care You will please forward the document (British Patent) by Bamber's Express to this place. Yours, respectfully,
GEO. HAWKHURST.

THOSE 300 mahogany logs received from Central America by Hobbs, Gilmore & Co., are finding a ready sale. ***

SPECTACLES.—Their adaptation to the various conditions of sight is the specialty of C. Muller, Opticien, 225 Montgomery street, Russ Block, importer of optical and mathematical instruments. *

Important to Assayers.

Crucibles.

The Patent Plumbago Crucible Co.,
Manufacturers of all kinds of
Melting Pots, Portable Furnaces,
CRUCIBLES, and other fire-standing Goods,
Battersea Works, London.

THE MORGAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; change of temperature has no effect on them; stand on the average forty to fifty pourings.

CERTIFICATES:

United States Branch Mint, San Francisco, Cal., March 12, 1869.—Messrs. A. S. Hallidie & Co., Agents—Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,
Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869.—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs A. S Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.
GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Thurks, Silver City, Nevada, April 24, 1869—Messrs A. S Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest size—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,
A. S. HALLIDIE & CO.,
18v18-9p 519 Front street, San Francisco

PACIFIC
Rolling Mill Company,
SAN FRANCISCO, CAL.
Established for the Manufacture of
RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,
Embracing ALL SIZES of
Steamboat Shafts, Cranks, Pistons and Connecting Rods, Car and Locomotive Axles and Frames
—ALSO—
HAMMERED IRON
Of every description and size.
☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention.
☞ The highest price paid for Scrap Iron 9v143m9p

New Mining Advertisements.

Cordillera Gold and Silver Mining Company.—Location of Works: Morelos District, Chihuahua, Mexico.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty third day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
P M Jones	not issued	100	$100 00
S T Walch	276	10	10 00
W H Bennett	43	13	13 00
S T Walch	27	10	10 00
Alfred Harris	148	18	18 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-third day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, on Thursday, the ninth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.
HENRY A. REED, Secretary.
Office, 321 Washington street, San Francisco. jy24

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A G Chauche	3	2100	$105 00
L Franconi	7	1650	82 50
L Franconi	9	1150	57 50
E M Deney	46	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of July, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No 502 Montgomery street, Room 3, on the thirteenth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.
AUG. DuPRAT, Secretary.
Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. au28

Evening Star, No. 1, Silver Mining Company. Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of August, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the fifteenth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
WM. H. WATSON, Secretary.
Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. au28

I. X. L. Gold and Silver Mining Company.—Location of Mine: Silver Mountain District, Alpine County, California.

NOTICE.—The Annual Meeting of the I. X. L. Gold and Silver Mining Company, for the election of Trustees for the ensuing year, will be held at the office of the Company, Pioneer Hall, Montgomery street, San Francisco, Cal., on THURSDAY, September 9th, 1869, at 2 o'clock P. M.
J. CROWNINSHIELD, Secretary.
Office, Pioneer Hall, Montgomery street, up stairs, San Francisco. au28

Marlborough Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A G Chauche	3	2100	$105 00
Louis Franconi	7	1150	57 50
Louis Franconi	12	1050	52 50
E M Deney	63	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, California, on the thirteenth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.
AUG. DuPRAT, Secretary.
Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. au28

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of August, A. D. 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 529 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.
SAM'L S. MURPEY, Secretary.
Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. au28

Mining Notices--Continued.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of August, 1869, an assessment of fifty (50c) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventh day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-third day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. au7

George Washington Silver Mining Company. Location of Works: White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the first (1st) day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
H K Snow	unissued	276	$27 60
J B Scott	unissued	1623½	162 25
J J Ryan	unissued	1000	100 00
C A Kidder	unissued	500	50 00
W J Nightingale	32	138	6 90
Geo W Vincent	33	138	6 90
W H Stanley	61 to 66 10c-ea	300	15 00
W H Stanley	67, 68 10-ea	120	1 00
W R Stanley	71 to 85 10-ea	160	8 00
J P Voorhees	122	125	6 25
A M Brown	127	125	6 25
F A Cord	132	125	6 25

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.
THOS. J. OWENS, Secretary.
Office, No. 10 Stevenson Building, San Francisco. jy10

Glenwood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
O. D. SQUIRE, Secretary.
Office, No. 418 California street, San Francisco. jy12

Hamilton Hydraulic Tunnel and Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco; or to M. T. Brewer, Hamilton, Nevada.

Any stock upon which said assessment shall remain unpaid on the tenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. au14

Hornet Silver Mining Company.—Location of Works: White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of July, 1869, an assessment of ten (10c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth (8th) day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the thirtieth (30th) day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
M. S. MARTIN, Secretary.
Office, No. 11 Hayward's Building, 419 California street, San Francisco. jy31

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of August, 1869, an assessment of two dollars and fifty cents ($2.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-fifth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
O. H. CROWE, Secretary.
Office, 220 Clay street, San Francisco, Cal. au7

Lynn Mill and Mining Company, Kelsey District, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty first day of July, 1869, an assessment of two dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the fifteenth day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twentieth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
J. M. BUFFINGTON, Secretary.
Office, Room 37 New Merchants' Exchange, California street, San Francisco. jy24

Silver Sprout Mining Company.—Location of Works and Mines: Rearsarge District, Inyo county, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the thirty-first day of August, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-third day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
T. B. WINGARD, Secretary.
Office, 408 California street, San Francisco. jy31

Thunderbolt Mill and Mining Company.—Location of Works: White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the first day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J B Scott	unissued	5820	$291 00
H K Snow	unissued	1110	55 50
G Robinson	unissued	2200	110 00
Geo W Vincent	24	555	13 88
W J Nightingale	25	111	2 78
W J Nightingale	26	111	2 78
W J Nightingale	27	111	2 78
W J Nightingale	28	111	2 78
W J Nightingale	29	111	2 77
H H Scott	75	100	2 50
H H Scott	76	100	2 50
H K Snow	30	120	3 00
K K Snow	31	200	5 00

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.
THOS. J. OWENS, Secretary.
Office, No. 10 Stevenson Building, San Francisco, Cal. jy14

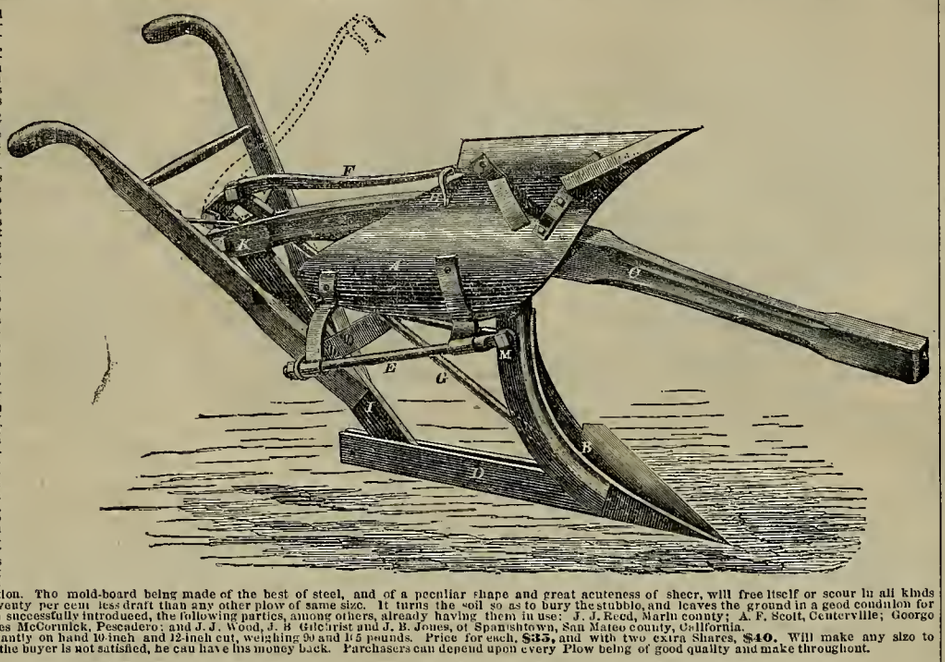
Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 439 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Friday, the seventeenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the seventh day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.
GEO. H. RUSSELL, Secretary.
Office, No. 439 California street, San Francisco. au14

WHERE TO ADVERTISE.—The attention of traders and mill machinists is called to the fact that the *Mountain Messenger*, of Downieville, Sierra County, possesses many special advantages as an advertising medium over a majority of the interior press, it being the only public journal published within a radius of sixty miles, in the richest and most populous mining sections of the State. Its weekly edition is double the average of country papers, being without the range of large dailies, and having no competition at home. Its local columns afford many items for our city contemporaries, while its rates of advertising are reasonably low 10v17tf

SCOVILLE'S CLIMAX SIDE-HILL PLOW.



The advantages claimed for this new Patent California Plow over others employed for similar work, consist in its being so constructed that the plow which is not in use is thrown up in such a manner as to rest its weight upon the beam, as shown in the engraving, where the plow, A, is firmly held by the hooks upon the end of the iron arm, F. The weight of the upturned plow is thus made to aid in keeping the opposite plow to its work in the ground, while the balance of weight is so equally divided as not to give an excess on one side. Its position is also such that it does not in any way interfere with the plowing, and the person who holds the plow can see to handle it as readily as though the mold-board was not resting upon the beam. The handles are so arranged as to give to the holder a sure and easy control of the plow. The rod, G, is operated by the arm or lever, F, so as to lock the plow to be used in its proper position in the standard, by entering a slot in the toe of the land-side, D. When it is desirable to use a single plow (as on level ground) either of the mold-boards may be quickly removed by loosening the nut, M, and removing the rod, E, thus converting it into a single plow. The mold boards are hung upon two angularly-placed axles, one of which belonging to the plow not in use is shown at E, with its mode of attachment to the axis. The plow may also be used double, as for ditching, etc., by slipping a cap over the joint of both plows when in proper position. The mold-board being made of the best of steel, and of a peculiar shape and great acuteness of sheer, will free itself or scour in all kinds of soil, and requires fully twenty per cent. less draft than any other plow of same size. It turns the soil so as to bury the stubble, and leaves the ground in a good condition for seeding. This Plow has been successfully introduced, the following parties, among others, already having them in use: J. J. Reed, Marin county; A. F. Scott, Centerville; George W. Shade, Watsonville; James McCormick, Pescadero; and J. J. Wood, J. B. Gilchrist and J. B. Jones, of Spanishtown, San Mateo county, California.

TWO SIZES kept constantly on hand 10-inch and 12-inch cut, weighing 90 and 115 pounds. Price for each, **$35**, and with two extra Shares, **$40**. Will make any size to order. If, after a fair trial, the buyer is not satisfied, he can have his money back. Purchasers can depend upon every Plow being of good quality and make throughout.

DORMAN, WOLF & CO., Sole Agents for this Coast,

9v19-2mw-1am **99 CLAY STREET, CORNER DRUMM, SAN FRANCISCO, CAL.**

Machinists and Foundries.

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

ap17 3m **113** Beale street, near Mission, S. F.

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

14v11 SACRAMENTO CITY

THE RISDON

Iron and Locomotive Works.

Incorporated, April 30, 1868. Capital, $1,600,000.

Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.

Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Devoe, Dimsmore & Co., San Francisco.

Steam Engine Builders, Boiler Makers,

MACHINISTS AND FOUNDRYMEN.

All work in their line attended to with promptness and dispatch.

Directors:

S. F. Butterworth,	Chas. E. McLane,
Lloyd Tevis,	John N. Risdon,
Jas. Pollock,	Joseph Moore.
Ben. Holladay,	

JOHN N. RISDON, President.

Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

6v11-6qr No. 28 Fremont street, San Francisco.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GLASGOW

Iron and Metal Importing Company

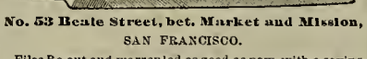
Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Sundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE Manage.

PACIFIC FILE WORKS,



No. 53 Beale Street, bet. Market and Mission,

SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

2v17-3m **T. G. DURNING & CO**

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,

Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.

Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States 1v17tf

G. T. PRACY.

MACHINE WORKS,

NOS. 109 and 111 MISSION STREET,

Between Main and Spear.

New and second-hand

Engines and Boilers,

FOR SALE.

Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

MANUFACTURER OF

Lathes, Drills,

And MILL MACHINERY of every description.

PRACY'S

New and Improved

STEAM ENGINE

REGULATORS,

The best and cheapest yet invented—manufactured and for sale. Parties are invited to examine it in practical operation.

F. A. HUNTINGTON'S

Shingle Machines

on hand.

Particular attention paid to Repairing.

☞ All work guaranteed to be done in a first-class manner, and at the lowest rates. 12v17tf

A NEW

Gold Metal.

THE GOLD METAL WATCHES

Now being introduced by

C. E. COLLINS & CO.,

No. 629 Washington Street,

SAN FRANCISCO,

Surpass anything yet made in the way of an Imitation Gold Watch. They wear well, and keep good time.

The Ladies' Watches cost $10, $15 and $20 each.
The Gentlemen's cost $15 and $20 each.
Chains, from $3 to $6 each.

Can be sent by Express to be paid for on delivery.

C. E. COLLINS & CO.,

No. 629 Washington street, San Francisco.

P. S.—Where six watches of the above are ordered at one time, we will send one extra, free of all charges.

We also deal in the finest Gold and Silver Watches, Watch Materials, etc. Send for circulars or prices.

7v19 4t

STOCK CERTIFICATES,
STOCK TRANSFER JOURNALS,
STOCK LEDGERS,
ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the *Mining and Scientific Press.*

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,

SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,

SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hainsbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, fuel saving, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. GALLAGHER. J. H. WEED V. KINGWELL.

9v13-1y

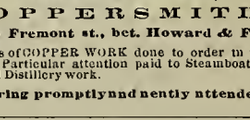
FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. **483** Brannan street.....San Francisco,

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

10v13qr



JAMES MACKEN,

COPPERSMITH,

226 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to. 13v11

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

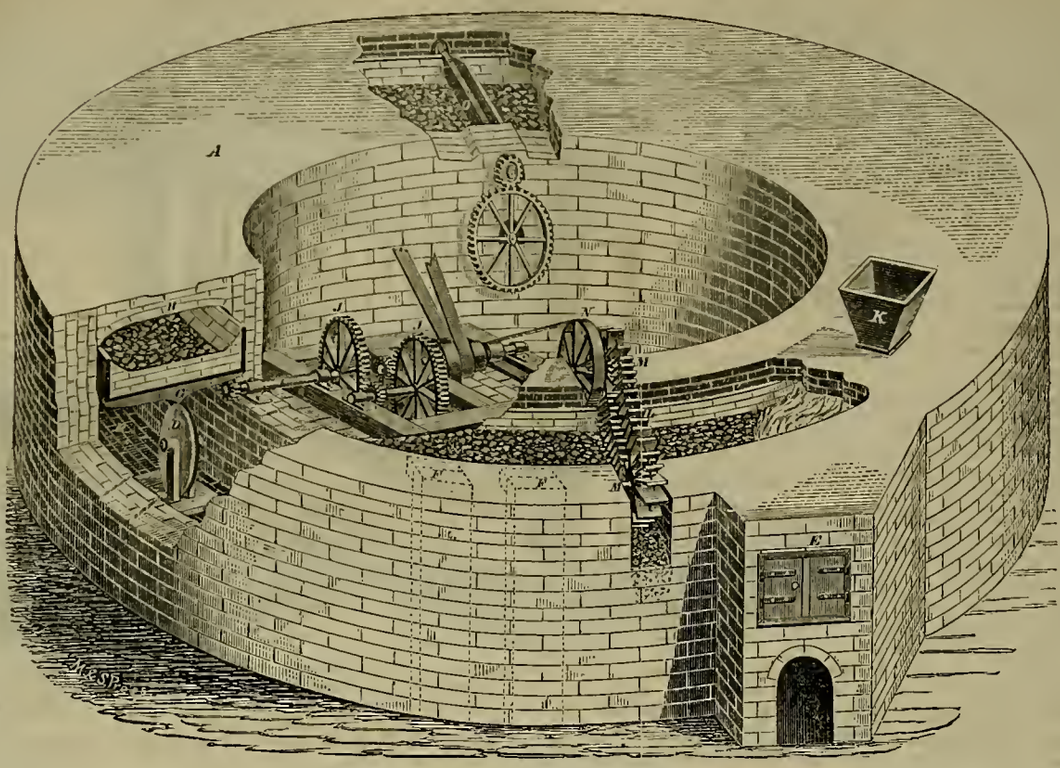
143 Beale St., bet. Mission and Howard,

SAN FRANCISCO.

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17-qy **J. WEICHHART, Proprietor.**

Fred. Ernst's Patent Rotary Roasting Furnace.



This is a mechanical furnace, which does away entirely with manual labor, excepting a fireman. It charges, roasts, stirs, and discharges the ore by a very simple mechanical contrivance,—in fact performs all the operation required in the oxidation or chlorination process of roasting gold or silver ores.

The ore is taken by means of an elevator from the battery, and is discharged constantly and regularly into the hopper, *K*, from whence it reaches the rotating hearth, *G*. This hearth consists of a cast iron orbicular ring paved or lined with bricks, and revolves on a series of iron rollers, *D*, and is kept continually in motion by means of the gearing, *J*. This gearing has two gear wheels, three feet in diameter, and pinions to regulate the speed from the cone pulley, increasing or diminishing it to conform to the required slow motion of the hearth, *G*. The hearth so charged and running constantly carries the ore into the first heat, which is next to the flues, and so passes all the different temperatures of the furnace, thus effecting a very uniform heating and chemical action on the ore; at the same time it has also to pass the stirrers, of which there are different kinds,—stationary and movable ones,—the number and speed of the latter varying according as the ore contains more or less sulphur. The movable paddle stirrers are shown at *O*. These movable stirrers are connected with the gearing under the iron bed of the hearth, *G*, as shown at different points, until it passes the fire-bridge, where it receives its ultimate and highest heat, and is then discharged by the dischargiog apparatus. This discharging apparatus consists of two chain or rag wheels, *M*, *M*. These two chain-wheels drive a double endless chain with inserted plates of iron (scrapers). The chain hanging loose underneath between the wheels draws these iron plates through the cavity of the hearth, and so discharges constantly the roasted ore. To keep the current of air constant throughout the whole length of the furnace, the arch over the hearth decreases slightly from the fire-bridge toward the flues. For concentrated sulphurets it may be advantageous to increase the circumference of the hearth. The advantages claimed as attainable from the use of this machine are—the doing away with a large portion of the costly hand labor ordinarily required, and the better and more thorough accomplishment of the same by machinery. A great saving of fuel, not only through the length of the hearth, but also for the reason that all the gases which are lost by other furnaces are economically employed in this as a substitute for other fuel.

The furnace is so constructed that the large access of air required for the oxidation of the ore, in addition to that demanded for the consumption of these gases, does not operate to materially lower the temperature in the furnace. When the ore in this furnace is once desulphurized, the gases cannot form any new combination with the ores or metals therein, for the reason that while the currents of air and gases are moving to the rear, the furnace hearth is constantly advancing in an opposite direction.

The construction of this furnace is of the simplest kind, and all the necessary castings can be easily transported even on mule-back. The loss of the silver by sublimation in present furnaces, it is claimed, is avoided in this, as the silver condenses before reaching the flues; the distance being great, and the heat diminishing gradually until the gases reach the point of final exit. Liberal terms are offered to parties who desire to use this furnace. Further information can be had by addressing the Inventor and Patentee,

F. ERNST, San Antonio, Lower California, Mexico,

Or by calling upon H. W. SCHMIDT, Druggist, Kearny street, corner of Sacramento, or at this office.

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, but one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, **229** Fremont street,

1v1 San Francisco.

REBELLIOUS ORES.

THE HAGAN FURNACE.

The above method for the purification of Rebellious Ores is respectfully offered to the public. Repeated actual workings show that the

HAGAN FURNACE

Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

It has never been claimed for it that it will extract gold from ores which do not contain any of that metal.

Parties owning rich but refractory veins, can treat with the undersigned upon the basis of

GUARANTEED RESULTS,

With responsible security. For an interview, and all desired particulars, address

THE PACIFIC ORE CO.,
P. O. Box **1019**, San Francisco.

June 25 1869. 29v18-3m

Notice to Miners,
Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,

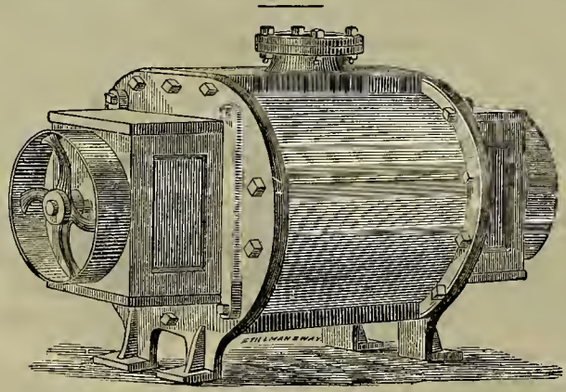
8v13-1y Stove Store, No. 1 Clay street, below Davis.

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

MANUFACTURED BY KEEP & BARGION,

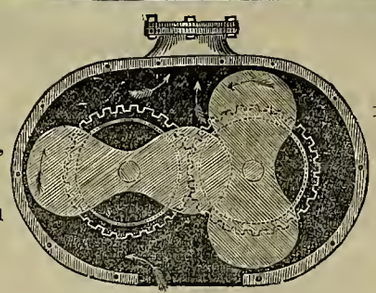
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



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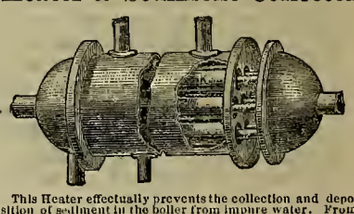

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A New Boot-Jack.—Mr. E. Coleman, of this city, one of our most enterprising and industrious inventors, has made an application, through the patent agency of this office, for a patent for an improved boot-jack, which consists of the old-fashioned wooden jack, with a flap or hinged piece that doubles back, to accommodate space, when not in use; but which, when doing duty, is thrown forward of the fork in which the heel is placed, with a flexible strap or loop, arching over its extremity, into which the toe of the boot is inserted, answering the purpose for which the heel of the other foot is usually employed in removing a closely fitting boot. The improvement consists in the application as above described of this strap, and it is a good one, without which no boot-jack will hereafter be worth house-room.

The California Manufacturing Co. has recently commenced operations at 437 Brannan street, in this city. The object is to manufacture new files of every description, and recut old files, which are warranted equal to new. We learn from Mr. L. Kramer, the business manager, who has lately returned from a traveling tour through the State, that he everywhere met with encouragement, and from the orders received, owing to the increase of this kind of business on the coast, he is fully satisfied as to the future prospects and final success of this new enterprise.

In addition to the file business, they are manufacturing mower and reaper sections, also the knives complete, adapted to all the different machines in use. We understand that Messrs. Wusthoff, Harris and Burke, the other partners, are all practical mechanics. As all work passes under their inspection before leaving the establishment, it is a sufficient guaranty that it will prove entirely satisfactory.

Removal.—The Pioneer Iron Works, Kittredge & Leavitt, proprietors, has been removed from Market street to Beale street, between Howard and Folsom. Their new building covers a good-sized water-lot, 137½x45 feet, giving ample room for conducting their business in future on a much more extensive scale. In addition to the manufacture of iron doors, safes, bank vaults, etc., they build the well-known Bussey Combination Lock, a California invention, which has secured popular favor wherever used.

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San Francisco Mining and Scientific Press.—This deservedly popular journal, devoted to the mining, mechanical and agricultural interests of the Pacific coast, entered on its nineteenth volume last Saturday. It is one of the fixed institutions of the country, and every miner in the State should subscribe for it.—*Elko Independent.*

The Fourth Volume of the Mechanics' Fair Daily Press will be printed in the Pavilion, commencing September 14th. It will be distributed free to over **100,000** different persons affording it a wide and immense circulation.

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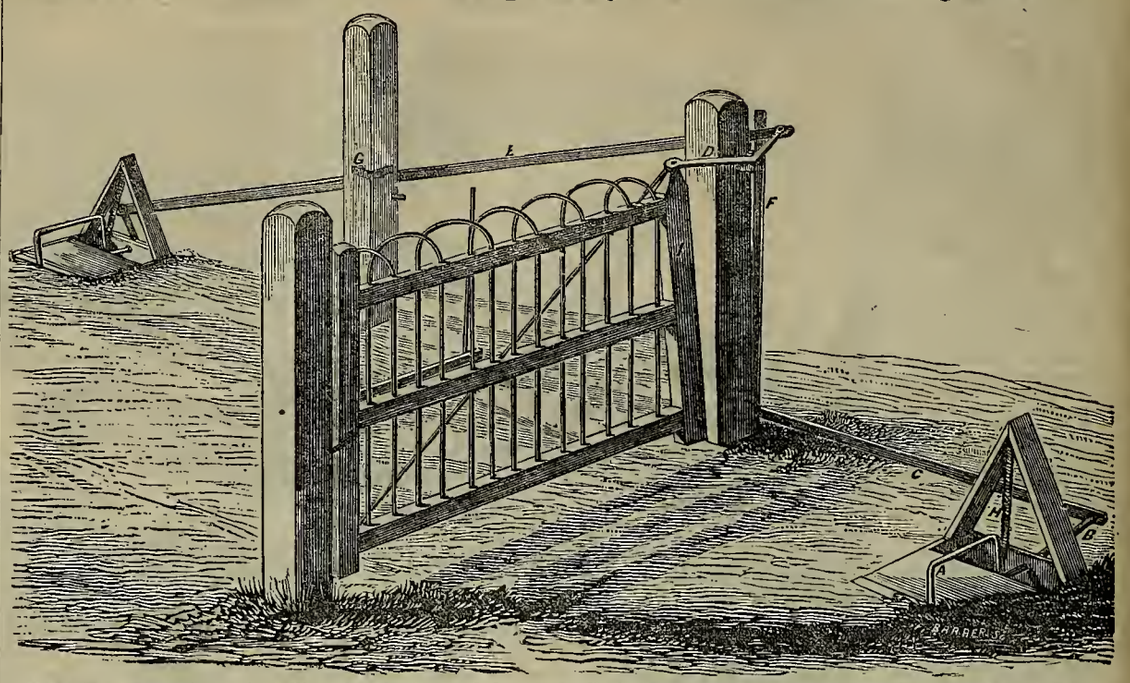
For copies of the Annual Circular and Report, letters may be addressed to the "Secretary of the Sheffield Scientific School," New Haven, Conn. 13v6-1y16p

Dickason's Patent Self-Opening and Self-Closing Gate.



We take pleasure in again calling the attention of the public, and especially Mechanics, to this simple and valuable Patent, with the privilege of giving the names and expressions of some few of the persons on this coast, who for several months have been using them, and whose judgment and standing in a business community would seem to entitle them to our confidence. They speak as follows:

I have erected at the Navy Yard, Mare Island, Cal., March 22d, 1869, a Patent Gate, owned by Mr. E. P. Hicks, and known as the "Approach Opener," and am satisfied with its performance. The tests I have made warrant me in saying that I believe Gates of this patent, properly made and suspended, possess all the advantages claimed, and I recommend their use to all who may require them.

Thos. Phelps,
Commander U. S. N., in charge Dept. of Yards and Docks.

Daniel S. Hussey,
Foreman Blacksmith, Yard and Dock Department.

Rooms California State Board of Agriculture,
Sacramento, June 6th, 1869.

E. P. Hicks, Esq.—Dear Sir: Having had a complete trial of your celebrated "Self-Opening and Self-Closing Gate," I can cheerfully recommend the same as worthy of the greatest consideration. No farmer in California should be without it. The ease, simplicity, durability, and cheapness of construction entitle it to the attention of the agricultural community.

Yours respectfully,
Chas. F. Reed,
President State Agricultural Society.

Salem, Oregon, Aug. 14, 1869.

Mr. Hicks:—We take the liberty of inditing you a few lines in accordance with our promise. We have a Gate in operation, and it works like the model.

Yours truly, Dodge & Barker.

Any person wishing information in regard to the Gate, or the purchase of Township or County Rights, will please address

E. P. HICKS,
9v19-11lp **San Francisco, Cal.**

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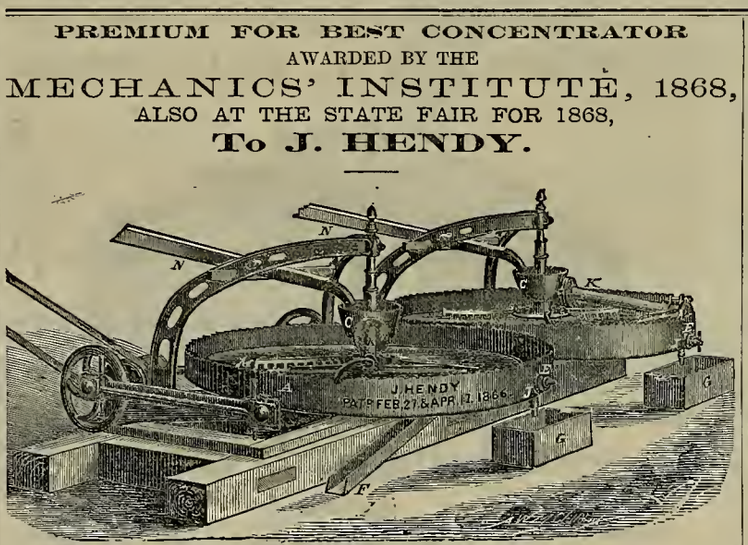
ALSO AT THE STATE FAIR FOR 1868,
To J. HENDY.



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Respectfully yours, J. H. Crossman, Supt. N. S. Mine.

J. HENDY, Patentee.
Office at Union Iron Works.
13v17tf

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, SEPTEMBER 4, 1869. VOLUME XIX. Number 10.

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The Theory and Practice of Plowing.

[Written for the Mining and Scientific Press.]

EDITORS PRESS:—I beg to submit to your judgment and place at your disposal some remarks on the subject of plowing. The theory herewith given is not mine; but years of experience have proved its value, and as it is not generally known, I have thought it might be of some service to your readers.

There are various modes of plowing as circumstances may require:—such, for instance, as in breaking new ground, in covering manure or grain, etc. I will say nothing of these special cases, but consider only plowing, as it is done in good culture, to "make" the soil. By the word "make," I mean to place it in good condition for cultivation aside from manuring. Farmers know that this end is best attained by proper plowing, pulverizing and mixing the grounds; thus rendering the soil light, and *airing it*, or exposing as many of its parts as possible to the action of atmospheric or other natural agents, such as air, light, heat, cold, rain, hail, fog, electricity, gases of various kinds, etc.; and by such means restoring to the land those productive principles which have become more or less exhausted by continuous cultivation.

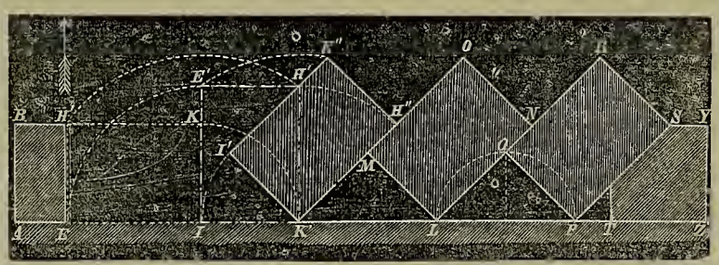
Before commencing to plow a piece of land, the farmer, of course, always decides upon a certain depth of furrow; but the width is generally taken at random, and often too great, in order to do quicker work. It will be hereinafter shown that in the case under consideration the proportion of the width to the depth is not arbitrary.

Let it be supposed that a piece of land is before the reader, measuring one acre, and the depth of the furrow has been ordered at ten inches. Now the question is: what will be the width of the band or furrow that will expose the largest possible surface in our acre of land to the influences of atmospheric agents, and place the soil in the best condition to be acted upon by said influences? I answer, the width must be fourteen inches.

Let us keep in mind that before plowing we have, as we supposed, a surface of one acre exposed to the action of atmospheric agents. Now if we should arrange for the depth and the width of the furrow, so as to take a small depth and a great width, the ground would be turned over, *upside down*, and we should still have only the surface of one acre exposed to the air, light, heat, etc.; and the field would still present, after plowing, a *plane* surface as before.

On the contrary, if the depth being ten inches, we take fourteen inches for the width, the ground will assume quite another appearance, as represented in the annexed diagram, which shows a transverse section taken in our field which has been partly plowed.

This figure is made on a scale of one-sixtsenth of an inch to one inch, and will be readily understood. The line B Y represents the surface of the field before plowing; A Z is the bottom of the furrows; B A is the depth of the furrow, and P Q R S and similar figures represent strips or bands of the soil, which have been successively cut and turned by the plow. A portion of the field is shown as having been plowed, and the various bands in position at P Q R S, L M O N, K′ I′ E″ H″, lie at an angle of forty-five degrees; such lines as O N M L, etc., being equal to the depth of the furrow—ten inches—and O M, N L, etc., representing the width—fourteen inches.



TRANSVERSE SECTION OF A FIELD PARTLY PLOWED.

It may be remarked that the strip K′ I′ E″ H″, lying as it does, the section E H I K, from which it came, ought not to be shown on this figure, as the ground has been placed in its new position, I′ K′ E″ H″, by the plow, the land-side of which has been cutting the land along the line E H. The section E H I K has been left, inclosed by dotted lines, to show how it has been made to turn around point I; the upper point, K, describing an arc of a circle and coming to K′; and so the prism, E H I K, standing up for a moment at I E′ H′ K′, finally reached its ultimate position I′ K′ E″ H″.

Now let the reader consider the present condition of the newly-plowed ground and measure certain lines on this figure. Examine the middle strip, L M O N. It will be seen that when we had, before plowing, only fourteen inches exposed to the air, *on a transverse line* of said band, such as represented by the dotted lines, H K, we have at present both lines, or sides, H″ O and O N, exposed to the same. Each of these lines measures ten inches. We have, consequently, on each land or strip of ground cut by the plow twenty inches instead of fourteen, exposed to atmospheric influences. Besides that, we have, underground, long spaces, or chambers, represented by the triangles K′ M L, L Q P, etc., which chambers allow the air to remain in permanent contact with sides L M and L Q of the band, and also to act on the subsoil, K′ L and L P. Now the sides, L M and L Q are also ten inches long each; so we have in all forty inches exposed, more or less, to atmospheric influences, instead of fourteen inches, as we had before plowing, or as we should have had if the ground had been turned by the plow upside down, as is often done. Comparing together the numbers 40 and 14, we have, by accurate plowing, nearly three times more surface exposed, and that without mentioning the line K′ L of the subsoil.

It may be objected that this figure is more theoretical than practical; but, with all due allowance, I will say that, with a proper plow, certain soils present an appearance nearly as correct after plowing as the diagram, and retain it more or less, sometimes for months. They finally lose it, because the ground is slowly decomposed or disintegrated, and crumbles down into the underlying spaces. But that is precisely the effect sought by the plowing, and is the most effectual mode to air and improve the soil.

It is seen in the diagram that, as we have supposed the depth of the furrow to be ten inches, the surface of our soil, represented by the line B Y, was, before plowing, ten inches above the bottom-line, A Z. Now the highest points of our bands E″ O R are seventeen inches above said line A Z, and such a height (or depth) will afford a good chance, and also time, for the ground to settle down. Water will, moreover, pass through our grounds as through a sponge, and the soil will not pack, because the chambers underneath will prevent that effect, by their allowing room for surplus water; and if heavy rains happen to fall, these chambers will act as reservoirs for a while, affording time for the water to soak slowly below through the subsoil.

Frost is, in certain climates and soils, a very efficient agent in pulverizing the ground and making it slack, as lime does; but for such an effect to be produced the ground must find room for slacking, and it can be seen on the middle band, L M O N, that the portions H″ O and N O will find room for swelling and slacking down into the angular spaces O H″ E″ and O N R, and also that underneath the portions M L and Q L will do the same into the chambers L M K′ and L Q P. Frost will not act underground, it is true, so much as it will at the surface; but the distances M H″ and Q N being in this case only four inches, the action of the frost underground may yet be beneficial.

If these are desirable effects, great advantage might be secured from their acting as effectually and as thoroughly as possible; and for that purpose it would be desirable to have the ground remain as long as possible in the position shown in the diagram, rather than to have it fall down at once.

Let us once more examine the whole structure. The ground is supported mostly on the chambers; and how are those built? It is seen that the chamber K′ M L is a triangle, rectangular at the point M; the basis, K′ L, is fourteen inches wide; the height is seven inches from base to summit, which corresponds, perpendicularly, to the half of the length of the base. The sides, M K′ and M L, are of equal length, and have an inclination of forty-five degrees. Thus the triangle is really constructed in the strongest form for sustaining weight. Its three angles may be conceived to rest on the circumference of a circle, somewhat like an arch, as shown by the dotted lines in the adjoining chamber. Any other form that the triangle might assume by reason of an alteration in the width here ascribed to the band would present *less resistance*.

If we consider, at present, the upper angular spaces, such as E″ H″ O, it will be seen that they are exactly similar to the lower ones. The sides, E″ H″ and O H″, make an angle of forty-five degrees, with a horizontal line. They meet at a right angle, and are equal in length. So they present the best conditions for resisting both the packing of the soil and its too speedy disintegration or crumbling by rain. If these sides should meet under an obtuse angle instead of a right angle, the soil would pack more under the rain, but the water would run down slower, and would have less effect for degrading. If the angle is acute, the soil would pack less; but the rain water would run down faster, and cause the ground to disintegrate sooner and fill up the angular spaces too fast. So our position is a medium one and the best we can obtain.

In a sudden and very heavy shower, if the water accumulates at the point H″, it will not stay long there. The distance, H″ M, is only four inches in the present case, and the water, besides soaking down through the grounds, may also follow the line H″ M, which has an inclination of forty-five degrees, and promptly reach the chamber, thus relieving the upper grounds from too great a quantity of water.

The subject of water must be insisted upon, because that is a most important agent, acting both chemically and mechanically.

After a good "plowing," the ground must undergo an efficient "harrowing;" and it can be seen on the diagram that the harrow will act more effectively on these high crests than it could do on lower ones; and also that the uniformity and smoothness of these crests will insure uniformity and evenness in the work. Grain can also be more uniformly sown, spread and covered on ground so prepared, than on any other.

I close this somewhat lengthy communication with saying, that although to the superficial observer all newly-plowed grounds may look about the same as the preceding figure, the intelligent farmer will closely study this diagram. He knows that from trifling causes great results may originate. He will ascertain the correctness or the unsoundness of this theory, and if he finds out that any other "width" than fourteen inches will present conditions different from those above described and less favorable, he will still retain an invariable rule that for a rational, I might perhaps more properly say *standard*, mode of plowing, *the width of the furrow must be to the depth as* 14 *is to* 10.

L. BEGON.

Sacramento, Aug. 25, 1869.

FAIR OAKS EPISCOPAL SEMINARY.—This institution, located at Fair Oaks, near Redwood City, appears to be in a progressive condition. Instructors: Principal and teacher of higher English, German and and ancient languages, Mrs. C. E. Jaycox; French and Spanish, and vocal music, Mlle. Margarita Martinez; drawing and painting, penmanship and book-keeping, Mr. C. E. Jaycox.

Communications.

North Idaho Quartz Mines.

Written for the Mining and Scientific Press.

Editors Press:—Three weeks since I gave you a brief description of this mining section, though expressed in general terms. Since writiug that acconnt some progress has heen made here in quartz mining. Suffice it to say of the two quartz mills then in operation, that hoth having become encumbered by debt, are liahle soon to change owuers. One of them has been employed in reducing ore from the Rescue lead during the few weeks past, while the other has heen idle. Three arastras have been employed for a few weeks in reducing ores found in the respective vicinity of each. Our millmen have relied too much npon the energy of quartz miners in supplying their mills with custom work, and hence have failed. The uecessary labor has not been performed in the mines to furnish a constant supply of ore at the mills, while the mill owners themselves have had no control of the miues. It is now in contemplation to place the mills and mines uuder one control, and it is hoped that sufficient capital will take hold of the work to give both quartz mining and milling a good degree of success in this camp. I will specify some of the characteristics of the work done upon the veins now partially opened, and the results so far obtained from their ores reduced at the mills.

The Rescue lead now has the most prominence. It was discovered about the middle of last December, but no work was done upon it until March last. It is situated about one mile south of the town of Washiugton, and its shaft is about 300 feet above Warren's creek. The company, consisting of five persons, have 800 feet of the vein. Surface prospecting has revealed a good vein throughout this 800 feet. A shaft seventy feet in depth has been snuk and securely timbered, from the bottom of which levels have been extended east 125 feet and west 85 feet along the vein. Throughout this entire 210 feet of levels the vein has proved to be good and well-defined, with an average crevice of 2½ feet and 18 inches of quartz. In sinking this shaft the vein gradually increased in size and improved in quality. The company has stoped out ahout 250 tons of ore above this level, which has been reduced at the Pioneer mill, yielding upwards of $8,000, or a little more than $32 per ton in gold. The hauling and milling cost $12 per ton. They have also had eleven tons of average ore reduced in an arastra, which yielded $52 per ton. The company seem to prefer the arastra to the mill process, and it is very prohable that they will pnt np several of their own. This mine is the best opened and worked of any in the camp, although much more recently discovered than many others. They employ some twenty-five men, under an experienced quartz miner, with horse-power for hoisting. They have constructed roads, shops, quartz houses, cars aud railways, all snited to their bnsiness, and indicative of a purpose to do permaneut mining. Thus far all has beeu done without the aid of other capital than their own lahor and the money they have taken from the mine.

The Samson is another vein upon which considerable work has been done. In the winter of 1867-8, about 200 tons of ore taken out and worked at the Hic Jacet mill yielded an average of nearly $25 per ton. Since then nearly 200 tons more have beeu extracted and worked at the same mill, and at two different arastras, with an average yield of nearly $40 per ton. The vein improves in depth. The mine embraces only 400 feet of the vein, and is owned by three persons. Their shaft is about 60 feet deep, with a level to the west of 85 feet and to the east of about 30 feet. Most of the ore is stoped from above these levels. The crevice is about 2½ feet, with about 14 inches of quartz. The walls are soft granite, easily wrought without blasting. I am informed that the company intend sinking their shaft to the depth of 60 feet below the present depth as soon as possible, and I think they have good encouragement for so doing. This mine is ahout 400 yards from the Hic Jacet mine.

The Hic Jacet mine embraces but one claim of 200 feet, and is about 300 yards from the mill. About 125 tons of ore have been taken out and mostly worked. The average yield of all the ore taken ont has heen $42 per ton, mostly gold. Their shaft is 50 feet deep, with east level of 25 fect, all stoped out above. At this depth there is a break or fault in the vein, the upper portion having moved northward, down the hill, 22 feet. The company have drifted until they reached the vein, but have done no other work npon it. This veiu, wheu properly worked, will probably prove one of the best in the camp. The crevice is about 20 inches, with about 15 of quartz.

The Winfield Scott is a vein from which about 10 tons of ore, assorted from 15 taken from the mine, was worked, with a yield of $178 per tou. Two shafts are opened upon the mine,—one to the depth of 70 feet and the other 50 feet. From the former shaft and from an open cut to the west of it, most of the quartz has been taken. About 80 tons in all have been extracted, and worked with an average yield of nearly $60 per ton. But so far it has beeu unprofitable, by reason of the hardness of the walls and the small amount of ore obtained. The crevice is about 20 inches, but the average width of the pay ore is not more than six inches. I think when this vein is opened to the depth of 150 feet a much larger amount of ore will be found in the vein, and that it may be made a profitable mine to work. It is situated about three-fourths of a mile from the Hic Jacet mill, with which it is counected by a good wagou road.

The Wm. B. Knott is sitnated about 500 yards from the Hic Jacet mill, and connected therewith by a good wagon road. About 250 tons of ore have beeu taken from this miue, and worked at tho Hic Jacet and Pioneer mills and two different arastras, with an average yield of about $35 per ton. The mine embraces 400 feet, upon which two shafts have been sunk, oue to the depth of nearly 60 feet and the other to about 30 feet. Levels have been run from a point 30 feet down the deepest shaft, both east and west, to a distance of about 40 feet, and the ore stoped from above. The crevice of the vein is nearly four feet, with about 15 inches of solid quartz. The remainder of the crevice is filled with granite and talc.

The Charity vein is situated about two and a half miles to the south of the town, and the mine, which has been worked, embraces 600 feet, and is owned by two companies. One shaft has been sunk to the depth of 70 feet, from which but little quartz has been taken. Several shafts of less depth have yielded considerable ore. Also two tunnels, or drifts, from the surface along the vein, have furnished more or less ore. Ahout 300 tons in all have been extracted and reduced at the Pioneer mill and at two arastras. The average result of the whole, as near as I can ascertain, has been about $25 per ton.

The Keystone vein is sitnated about five miles south of the town and ahout two miles from the *Hic Jacet* miil. ahout 25 tons of ore have been taken from it and worked at arastras with an average yield of $70 per ton. This mine embraces 2,000 feet and is owned by Messrs. Bemis and Sanderson, who also have constructed an arastra mill at a cost of abont $8,000. They are making preparations to open the mine on an extended scale, and to grind the ore at their own mill. I think they will make it highly profitable. This vein contains a good percentage of tellurium, combined with the gold and silver, and the ore requires a different treatment from that of most of the ores in the camp.

Numerous other veins have been tested at the mills with favorable results. Several have heen tested for silver with good results. Among them is the Martinez, which has proved to be the best. But as yet we have not the appliances for working silver ores.

As I intimated in my former letter, we are novices in the working of quartz, and are daily losing money by reason of our inexperience and waut of capital to command the experience and means suited and requisito to the bnsiness. We obtain good results from our ores, but at a heavy cost—far greater than that to which we should be subjected with skill and means for doing the requisite dead work upon our mines. We hope, however, to gain experience in time, and to learn to economize. Many of us may he broken men during our schooling, hut if we can gather strength and means to pay up after we graduate at the school of experience, we will be content.

A. L.

Washington, I. T., Ang. 6th, 1869.

Mining in Indian Valley.

[Written for the Mining and Scientific Press.]

Editors Press:—I have thought that a few notes, showing the progress which is being made in the mines of this district might not be without interest to your readers.

The Crescent Mine and Mill is situated in Indian Valley, Plumas County, about six miles from Taylorville. On visiting this mine and introducing myself to the Superintendent, Mr. M. B. Bransford, I was requested, in company with the foreman, Mr. Peard, to go through and examine the works. We first descended into a very large cut, some seventy-five feet deep and fifteen wide, where I found a very fine vein, known as the Old Horseshoe ledge. The company commenced working upon its surface croppings, on the first of July, and having followed it down as described, have found it to be a well-defined ledge, fifteen feet wide and very rich. Gold could be seen in many places. The mine is very dry. The company have hoisting works some 300 feet from the ledge, and the ore is taken up through one of the shafts and then in cars to the mill. I understand that this company intends to put up new hoisting works soon, between this ledge and their old one. To give some idea of the richuess of the ore in the company's new ledge, I will state that the Superintendent informed me that the cleau up on July 15th, after eleven days' run, was $9,500; and for the eleven days previous to August 1st, it was $10,500. Only ten miners were employed in taking out rock during the time. These two runs, after paying all expenses, netted a clean dividend of $17,500. The company use the common black powder.

The mill, which is a very large and fine one, consists of thirty-two stamps, although only sixteen are used at present. The company is having the other sixteen put in working order, and will soon pnt an additional nnmber of hands into the mine. The engine is a very superior one of 120 horse-power. They are running the mill night and day; but the hoisting works only during the day. The rock is broken up by a large sized Blake's rock-breaker, which does good work. The men employed about these works evinced their appreciation of a good mining paper, by forming a club of twenty to take the Mining and Scientific Press at the club price of $4—every man about the mill and mine joined therein to make up the full number.

Cherokee is a small mining camp, half a mile from Round Valley, where a few mines have been located. Here is the Kittle mine, which I visited, descending a shaft 150 feet to the lower level, in company with the foreman, Mr. H. Gregge. The ledge is a very fine one, from three to six feet wide. The Caledonia is an extension, west, the proprietors of which are doing well and getting out very fine rock. They have very good hoisting works; hut are working only during the day for the lack of hands. The ledge crops out on the side of a hill, into which drifts have been run to strike the same below its croppings. The rock, crushed to date, has paid for all improvements, including a 30 horse-power engine, and left a net balance of $75,000. The owners are Messrs. Judkins & Kellogg. The company has a very fine 6-stamp mill, about half a mile from Cherokee, which is driveu hy a turbine wheel. This mill is run night and day. The ore has to be hauled one mile. This mine was discovered in 1862; but not worked much until 1867. The present Superintendent is George Standart. A club has also been formed at this mine and mill for the Mining and Scientifio Press.

The next visited was the Greck mine, lately taken up, and located on the side of the hill back of the hotel. The company has now a tunuel some eighty feet, and have sunk a shaft sixty feet from the top of the hill, where they find the ledge from four to six feet wide. The rock looks well, and shows a fine prospect when pulverized and panned out. The owners are Mr. George Bellas and J. B. Bachelder. They have been trying to rent the Caledonia mill; but have not yet snceeeded.

This is evidently a promising mining section. I was informed that the Kittle mine was in want of ten men; J. A. Blood's mine, fifteen. The Crescent will pnt on twenty-five men at an early day. Mr. Blood has sent to the Lahor Exchange, in San Francisco, for men.

W. M.

Salt a Necessity.

The following is from one of Dr. Letheby's Cantor Lectures before the Society of Arts, London: "The constant presence of common salt in the secretions, and the necessity for it in due proportion in the blood, indicate the importance of a supply of it with the food. We perceive this in the instinct of animals, and in our own craving for it. Animals, in fact, will travel long distances, and brave the greatest dangers, to obtain it. Men will barter gold for it; indeed, among the Gallas, and on the coast of Sierra Leone, brothers will sell their sisters, husbands their wives, and parents their children, for salt. In the district of Accra, on the Gold Coast of Africa, a handful of salt is the most valuable thing upon earth after gold, and will purchase a slave or two. Munzo Park tells us that with the Mandingoes and Bamharas the use of salt is such a luxury that to say of a man "he flavors his food with salt" is to imply that he is rich; and children will suck a piece of rock-salt as if it were sugar.

The experiments of Boussingault have shown that animals deprived of salt, other than that contained naturally in the food, soon get heavy and dull in their temperament, and have a rough and staring coat. Reulin states that animals which do not find in their food or drink, become less prolific, and the breed rapidly diminishes in number. This is confirmed by Dr. Le Saine, who says, in his prize-essay on salt, that it increases the fertility of the male and the fecundity of the female, and it doubles the power of nourishing the fœtus. During the period of suckling, also, salt given to the mother renders the milk more abundant and more nutritious. It likewise accelerates growth, and gives a finer condition to the skin; and the flesh of animals fed with it is better flavored and more easily digested, than that of animals which do not partake of it. In the experiments of the French Academicians, flesh deprived of its saline constituents hy being washed with water, lost its nutritive power, and animals fed on it soon die of starvation. Even after a few days, with such a diet, the instincts of the animals told them it was worthless as food; indeed, for all purposes of nutrition, it was, as Liebig says, no better than the eating of stones, and the utmost torments of hunger were hardly sufficient to induce them to continue the diet. There was plenty of nitrogenous matter in the food, hut there was no medinm for its solution and absorption, and hence it was useless."

Sulphur and Soda on Deer Creek.—The *Northern Californian* (Chico) says: "Mr. John D. Campbell reports the discovery in a cañon on the banks of Deer creek of large deposits of sulphur and soda. The former is contained in crevices of the rock, and is hard and free from any alloy. The latter is found in and at the mouth of a very large cave. He says hundreds of bnshels of pure soda, white as snow, lie in heaps at the mouth of the cave; while the waters holding it in solution are falling in showers from the ceiling and walls of the cavern."

Food and Exercise.—As a general rule, food which is best enjoyed is best digested. Just so exercise which is most agreeable is usually the most beneficial. In selecting methods of exercise, every individual should be guided by his own individnal tastes. It is better to change frequently from one exercise to another. It is well even to consult our whims and our varying moods; above all things we should strive to prevent our exercise becoming a dry, hard, mechanical rontine. The heart should go with the muscles.

Oil in Tulare.—With the probable early completion of one or more lines of railroad into the Tulare Valley, the oil deposits of that region are again beginning to attract attention. Popular faith in the ultimate realization of profitable oil wells in California has not yet died out. If they are ever found anywhere in the State, we know of no more likely place for them than in the Tulare Valley. The indications on the west side of the valley are well known.

Mechanical Progress.

Progress in Iron and Steel Making.

The work of the whole century preceding the last decade was simply to engraft upon the old processes, a few radical inventions, such as puddling, the hot-blast and the use of manganese. But the last decade has wrought revolutionary changes in the treatment and products of iron. By increasing the height of smelting furnaces from 50 to 100 feet, and other dimensions in proportion, the cost of producing pig iron has been reduced from twenty to thirty per cent. By selecting fluxes in accordance with chemical laws, the impurities in ores heretofore deemed unsuitable are neutralized. The most perfect utilization of fuel by decomposing coal and burning the resulting gases perfectly, instead of burning solid fuel with unavoidable loss, and by saving the waste heat in regenerators, by Siemens' processes, is one of the most useful inventions ever applied in metallurgy. The most radical improvement is the Bessemer process of converting crude pig iron into soft steel by decarburizing and by jets of air. To unprofessional readers the term steel signifies a hard, brittle, elastic alloy of iron, granular and white in fracture, and capable of being hardened and tempered for cutting tools. The hundreds of thousands of tons of Bessemer and other machinery steel annually produced more nearly resembles wrought iron in all respects except structure. It is softer and less elastic than tool steel, as ductile as wrought iron, malleable at a high heat, incapable of hardening sufficiently for tools, gray, and, when very soft, almost fibrous in fracture. But when it is compared with wrought iron the differences are more remarkable than the resemblances. While wrought iron is welded from small, pasty masses of puddled pig iron, and is only freed from cinder by repeated welding, steel is cast from a liquid mass, which from the fact of its fluidity is homogeneous, uniform, sound and pure. The greater part of the cast steel now made is substantially cast wrought iron. If it were hard and brittle like tool steel it would be unfit for rails, axles, machinery, and the thousand uses where it receives violent blows and strains. If it were welded and heterogeneous in its structure like wrought iron, it would—witness iron rails the world over—laminate, wear and deteriorate irregularly and rapidly under great strains. But being both ductile and homogeneous, "low" or "mild," or machinery steel, as made by crucibles, or by the Bessemer, the Martin, or other processes, is exceedingly durable under every variety of strain and wear, and has already wrought a revolution in the proportions and capacity of machinery.—*N. Y. Tribune.*

Machine for Making Metallic Tubes. An invention which is described and illustrated in London *Engineering*, is for making tubes of sheet iron, brass, copper or zinc. Stove pipe is turned out by it at the rate of sixty feet per minute. The tubes are made from flat strips or skelps, with a continuous, longitudinal joint, wherein two continuous edges are lapped and locked together by pressure only. If the statements of the patentees may be fully relied upon, small (1-inch) copper tubes made upon this plan have withstood a pressure of 250 pounds per square inch without leaking, and tubes of iron, zinc, tin, etc., considerable, although less, pressures. The joint can be formed either inside or outside of the tube, so as to present a flush surface on either side as required. The above named journal speaks of this as the invention of an American, and as a promising one.

Another Improvement in Iron Making. Dr. William Field, of Wilmington, Delaware, has invented an improvement in the manufacture of iron and steel. "If,"—says the *Iron Age*,—"all that is claimed for it is true, it is one of the greatest discoveries that have been made in many years." Dr. Field claims that he can make from inferior ores the best quality of wrought iron at a less price than at present the ordinary quality is produced for. He has specimens of iron and steel which show favorably. The process consists in the addition of certain chemicals, costing about seventy-five cents per ton of iron, which remove all the phosphorus and sulphur.

Utilizing Waste Steam without Condensing It.—Mr. R. Meldrum, a Scotchman, has invented a plan for the utilization of the waste steam which has done its work in the cylinder, without condensing it with cold water. It consists of a chamber or chambers (which latter are connected with each other by proper openings) in which fans are mounted, and from which, as well as the boiler cylinder and parts in connection therewith, common air has been extracted, either through displacement or by an air-pump. The steam, when allowed to bear on these fans, owing to their position, will drive them round at great speed, but in accordance with the power of the steam, and there being a sufficiency of the above, the steam will in its progress lose its power until it has none; or, in other words, be received into a vacuum. These chambers by their proper ducts will receive the condensed steam, from which, or other suitable place, it may be pumped back to the boiler.

The Mount Cenis Cars.—Dr. J. G. Holland writes the Springfield *Republican* of his trip across the Alps, and thus notes the central rail: "It is about twice as high as the others. It is grasped by two wheels opposite to each other, under a pressure that makes their slipping upon the iron almost an impossibility. There is no limit to the amount of hugging power which these two wheels may be made to exert upon the rail. This for going up the hill. In going down, the brakes, instead of being applied to the wheels of the engine and the cars, are applied directly to the rail. Two brakes, opposed to each other, are made to hug it so tightly that they can stop a train anywhere, or hold it hanging from a crag in the air, if necessary. The curves of the road are so sharp that it would be impossible to keep the cars on an ordinary track. The cars are short, and made with seats upon the sides, like those of a horse car."

Sudden Cooling or Heating of Boilers.—A writer in the *Locomotive Engineers' Journal* says: "Take a locomotive boiler of ordinary size, it will be nearly one inch longer with steam at a moderate pressure than it was with cold water. If the water is suddenly blown out and the boiler filled with cold water, it will cool the bottom of the boiler first, and the shell will cool much faster than the flues. Now let any one estimate the power that will be exerted on the parts that bear the greatest strain with the top of the boiler one inch longer than the bottom, and the flues longer or shorter, as the case may be." For a similar reason, the blower should never be used with a low fire and little steam. The parts exposed to the fire will expand the most rapidly, and the strain consequently be unequal."

Lacquer for Philosophical Instruments.—We give the following recipe from a new book, *The Painter's Companion*, noticed by us in a recent issue: "Gamboge, an ounce and a half; gum sandrac, four ounces; gum elemi, four ounces; dragon's blood, two ounces; terra merita, an ounce and a half; oriental saffron, four grains; seed-lac, two ounces; pounded glass, six ounces; pure alcohol, forty ounces. The dragon's blood, gum elemi, seed-lac and gamboge, are pounded and mixed with the glass. Over them is poured the tincture obtained by infusing the saffron and terra merita in the alcohol for twenty-four hours; this tincture being first strained through a piece of clean linen cloth."

Steel Weakened by Heating.—"In employing steel for purposes in which the material must be heated for further working, especial attention should be paid to the diminution of strength consequent upon such heating. This diminution, as proved by experiments, is greater in steel than in iron; and in different kinds of steel is greater according as the metal is harder, or richer in carbon."—*Styffe.*

A Monster Cannon.—A new twenty-inch cannon, smooth bore, weighing fifty-seven tons, has lately arrived at Fortress Monroe from Pittsburgh, Pa. It is the largest piece of ordnance ever produced in this country. It will throw a ball weighing eleven hundred pounds.

Scientific Progress.

Filtration no Remedy.

The water of the river Maas, in the Netherlands, which furnishes the chief supply for domestic purposes to several towns along its course, invariably produces diarrhœa in persons unaccustomed to its use. Analyses have not revealed the cause. Filtration has been found of no avail as a preventive. It has been found by Dr. Gunning, of Amsterdam, that the slight turbidity of the water is due to the presence of minutely divided clay, by the aid of which organic matter is kept suspended even after days of rest, and in such fine particles as to pass through a filter. A solution of alum caused after some time a precipitate, which contained organic matter in large quantities. Dr. Gunning discovered that perchloride of iron rendered this water perfectly pure. To one litre of water, 0.032 gramme of the salt, dissolved in water, was added; after being well stirred, it was allowed to settle for 36 hours. No free hydrochloric acid was left; but on the large scale, Dr. G. advises that a small quantity of crystallized carbonate of soda be added before using. At Dr. Gunning's request, a scientific gentleman of Rotterdam has submitted the water to this treatment on a large scale, and arrived at the conclusion, not only that it is thereby deprived of its noxious properties, but that it is an unfailing remedy for the illness caused by the water not so treated. Moreover the same process served to render pure other waters far more foul, which were experimented upon. The proportion of carbonate of soda to the quantity of perchloride of iron above-named, is 0.085 gramme. The city of Rotterdam is to be furnished with large water works, in which this treatment is to be adopted on the large scale.

New Assay Weights for Gold and Silver Ores.—Professor Chandler describes his new system of weights in the N. Y. *Mining Journal.* We give the plan upon which the system is based:—"The ton of 2000 lbs. contains 29,166 troy ounces. If we use 29.166 grammes of ore in our assay, every milligramme (0;001) of precious metal obtained will be equal to 1-29166 of the ore, which will be 1 troy ounce in 1 ton of 2000 pounds. This is the starting-point in the new set of weights. A weight of 29.166⅔ grammes is our assay ton, and a milligramme obtained from the *assay ton* of ore is an *assay troy ounce.* We have only to write milligrammes as units to have our weight of precious metal in troy ounces per ton. Thus: a sample of gold quartz yields from one assay ton 0.00277 gold, 0.00054 silver. Moving the decimal point to make the milligrammes read units, we have 2.77 ounces gold and 0.54 ounces silver per ton.

Effect of Induction Currents upon the Amœba.—This formed the subject of a paper by M. Engelmann which was presented to the Royal Academy of Sciences of Amsterdam at a late meeting. When the current is feeble, there is an arrest of the granules, but no change of form. In about five seconds the normal conditions are restored. If the excitation is moderate, there is immediate arrest of the granules, and in about three seconds, contraction. If the irritation is powerful, there is immediate arrest of the granules, and immediate contraction. The phenomena in the last case last about two minutes.

Identity of Caffeine and Theine.—M. Hager found that the physiological effect of these two substances, in equal doses, and under the same circumstances, is by no means the same; although chemical analysis proves them to be absolutely identical. Here is shown the difference between the delicate workings of the stomach laboratory, and those of the scientist's chemical re-agents.

Condensing of Magnetism.

M. Jamin has presented a paper to the French Academy, detailing his experiments upon this subject. Having had a large horse-shoe magnet made, consisting of ten laminæ of homogeneous steel, each weighing 10 kilogrammes, he suspended it to a book attached to a strong beam, and having wound copper wire around each of the legs, which were turned downwards, he put the latter in communication with a battery of 50 of Bunsen's elements. There was, further, a series of iron plates, which could be separately applied to each of the laminæ. Before attaching any of the latter, the electric current was driven through the apparatus for a few minutes, and then interrupted, whereby the magnet acquired its first degree of saturation, marked by a certain deviation of a small horizontal needle. One of the iron plates—"contacts"—was then put on, and it supported a weight of 140 kilogrammes. A second trial was now made; and the current having passed through again for a few seconds, it was found that the horse-shoe would support 300 kilogrammes, instead of 140. The number of contacts being now increased to five, it was found, that they could support 680 kilogrammes,—which they did for the space of a full week. No sooner, however, were the contacts taken off, than the horse-shoe returned to its usual permanent strength of 140 kilogrammes.

Desmids and Diatoms.

The following is from an article in the last *American Naturalist*, by Prof. Arthur M. Edwards: "The Desmids have had this designation applied to them on account of their being made up of two aymmetrical halves, united together by means of a band or bridge. They are very beautiful when examined by means of powerful glasses. In a few instances this bilateral symmetry is not so evident as in others, or even seems to be entirely absent. External warty or spinous protuberances, or processes, are very commonly present, and then the outline of the plant is of great beauty, the green cell-contents, made up for the most part of the same material as constitutes the coloring matter of the leaves of larger plants, and there called chlorophyl, but in the Desmids known as endochrome, causing them to appear almost like brilliant gems of great purity of tint and configuration. In some cases no such external projections are present, but yet the outline of the cell is, nevertheless, extremely graceful. In the Diatoms the cell-wall is strengthened and supported by having deposited within it a mass of silicious material which then becomes marked with wonderfully fine tracings and sculpturings; but in the Desmids no such stony and indestructible substance is present, stiff cellulose only constituting the skeleton of the plant. Hence we do not find the remains of these organisms occurring fossilized in the older strata of the globe as is very commonly the case with the Diatoms."

A New Jelly-Fish.—Prof. Verrill describes in *Silliman's Journal* for July a beautiful jelly-fish discovered by himself and companions during a recent excursion to the coast of Maine. It is,—he says,—the type of a new genus, and represents a family previously unknown upon the Atlantic coast. It is large in size and yellowish in color. The tentacles are about eighty in number; and in large specimens may extend fifteen or twenty feet. They are scalloped on one edge, and margined with white. The largest specimen was eighteen inches in diameter. Prof. Verrill has named it *Callinema ornata.*

The Moon's Heat.—The Earl of Rosse is experimenting with a thermopile and telescope to determine what proportion of the moon's heat comes from its interior, what proportion falls from the sun on the moon's surface, and is reflected, and what proportion is absorbed. The last raises the temperature of the moon's surface, and is afterwards radiated.

Farming and Gardening.

Something about Barley.

A warm, rich, kind soil is best adapted to this cereal. A sandy or stiff, cold clay or any worn out field is unsuitable for such a crop. Soil for barley should be well cultivated—plowed deep. Early sown barley is generally heavier than late sown. In rotating, barley is a good crop to follow potatoes; any soil well adapted for potatoes is good for barley—Barley does not do as well on freshly turned sod, as on that which has been previously cultivated. As a general thing barley is the easiest and surest of all grain crops to cultivate and harvest. It ripens early and may soon be turned into cash. It has been sown, grown, harvested, and the money from the product invested, within ninety days time. Barley takes but little from the soil—less than oats, much less than wheat. For this reason ground which has been sowed with this grain, is good to follow with almost any crop. For this reason also it is good to sow with grass. It gives clover and timothy as good a chance as though its thin stalk was not intermixed with them. While it shelters and protects the slow and early growth of the grass, it is soon out of their way entirely.

Barley is more variable in price than any other cereal, and for that reason is not as desirable as wheat for extensive cultivation. It is better for farmers to raise it only in small quantities, as a bye-product. If the price is low use it more freely on the farm. It makes excellent food, no matter how you use it. When properly ground and bolted it is not bad for the table. If the reader doubts this statement let him try some barley griddle-cakes. Barley contains a large proportion of nourishment.

Bright, clean barley straw is much relished by cattle,—while nothing is better for them than barley meal. Hence, if the crop is so abundant that the beer makers—its chief buyers—cannot be compelled to give you a fair price for it, you can turn the surplus to better account by converting it into beef, or pork, or eggs.

Barley is frequently imported into the United States. In 1868, some 200,000 bushels were imported from England, chiefly for distilleries in Chicago, Cincinnati, and other western cities; while in 1867, the home supply being ample, not a bushel was imported. The usual cost of British barley for malting is from $1.50 to $1.62½. The British grain is considered superior to the American for such use.

The natural classification of barley is by the ear, into three kinds—two-rowed, four-rowed and six-rowed. By the grains, it is classified into two kinds—the *bere*, or *big*, and *barley*. The bere, or big, is four-rowed—the barley two or six-rowed. The grain of the former is mainly distinguished from the latter by having its radial line so traced as to give the grain a twisted appearance, by which one of its sides is somewhat larger than the other. The grain of the latter is divided by a straight medial line into two equal parts. Its grain is also smaller than the former, though more plump and heavy. The two and six-rowed are the varieties generally cultivated. The former is preferred by many, especially in the Middle and Western States, from the fact that it is a larger grain, weighs more to the bushel, and may be sown thicker on the ground—say as two and a half bushels of the two-rowed to two bushels of the four-rowed.

A California Farm.—The present year's yield of the farm of Mr. Bidwell, of Chico, in this State, has been 35,282 bushels of wheat, 10,300 of barley, 900 of oats, 300 tons of hay, besides eleven acres of corn not yet harvested. The yield of grain this year has been 2,200 bushels in excess of last.

Facts About Cattle.

It is a well-established fact that all domestic animals may be greatly improved in size and value by careful breeding and culture. One hundred and fifty years ago the average weight of cattle (heeves), at the great English Smithfield market, did not exceed 370 pounds, and that of sheep twenty-eight. Now the average weight of English beeves is over 800 pounds; while sheep have increased to eighty.

The average weight of cattle brought to the New York market is about 700 pounds—of sheep fifty. California cattle greatly exceed in weight either of the above; how much, we are unable to say. If any records have been kept, it would be interesting to compare them with the above.

Careful records kept by agricultural fairs in Maine, have shown that there has been a gradual increase in the size of neat cattle in that State, by improved culture, which already exceeds a foot in the girth of working oxen. The improvement in the quality of horses has also been very rapid and marked, in that State.

Experience shows that animals with small stomachs require concentrated food—those with large stomachs do best with coarse food. Horses and oxen have large stomachs; hogs and human beings have small ones.

An experienced wool grower says that if sheep are kept in the same lot with a few fat or good-conditioned cattle, no dog will injure them; for as soon as the dogs approach the sheep, they instinctively run to the cattle for protection, who at once unite in driving off the dogs. The farmer who communicates the above to an eastern exchange says he has practiced this plan for thirty years, and has never lost a sheep by dogs; while his neighbors, on all sides, who do not use this caution, have suffered severely from the dog nuisance.

To Skin Peaches.—The skin should never be removed from peaches by paring; a better way is to make a weak lye—say by adding two quarts of ashes to four quarts of water—place the same in an iron pot and bring to a boil. While the liquid is still hot, place therein about a dozen peaches and take them out as quickly as possible (using a skimmer) and drop them into cold water. The skin will then slip off without trouble, when they should be dropped into another vessel of clear, cold water, to remain until wanted to cut up or can; either of which should be done as soon as possible after the skin has been removed.

Cause of the Decay of Orchards.—There are numerous reasons for the often seeming unaccountable decay of orchards. Among other causes than the exhaustion of the soil from constant crops for the production of such a result, may be mentioned the blowing away of the leaves, by the fall of which nature designed to feed the soil in which the tree stands and the taking away of crops of grass,—grain or roots, without any remunerative return of manures. The whipping of the limbs with poles, to remove the fruit is also a material injury to the trees. Improper trimming is often a cause of serious injury. The pasturage of any stock other than hogs, in an orchard, is also a great injury. Hens as well as hogs help to kill the enemies of the trees.

Vegetables and Fruit from Bermuda. A large steamer now runs regularly between New York and the Bermuda Islands, bearing to that market the earliest onions and potatoes, and thousands of bunches of the finest bananas, etc., and carrying back such merchandise as is needed at the islands.

Santa Cruz Products.—The annual product of lumber, of all kinds, in Santa Cruz County, is set down by the *Sentinel* at 20,000,000 feet. The value of lime produced $360,000; leather, $250,000; powder, $500,000; butter and cheese, $15,000.

California Hams and Bacon.—It is said that the best hams and bacon made in California are from mountain hogs. The principal firms engaged in this business are Cashin & Kent, of Grass Valley; Garrecht & Co., of Shasta; Phillips & Chandler, Red Bluff; and Heitzig & Co., of La Porte. These four firms alone slaughter about ten thousand hogs per year, relying on Idaho and Nevada for a market. The large packing house of Wilson & Stevens, of this city, supplies the army and navy of the whole Pacific Coast, with pork, and for that purpose slaughters seven thousand head per annum.

There has been some talk about erecting an extensive packing establishment on the line of the Pacific Railroad, near the summit of the Sierra Nevada where the snows continue almost through the entire summer, producing a temperature extremely favorable for such a business. The hogs might be raised and slaughtered anywhere along the line of the road, in the foot-hills or valleys.

Hydraulic Power in Flour Packing.—Flour for the use of the French army is packed, by hydraulic power, in tin cases, and so compressed as to be impervious to damp or mould. Great saving is thereby made in storage, while the flour is said to keep better. It is stated that this idea originated with the Emperor himself, who ordered experiments to be made, which resulted in a complete success. Why might not flour be put through a compressing machine, something after the manner of pressed brick, and the expense of freightage and handling be thereby materially reduced?

Imported Cereals.—Commissioner Capron, of the Agricultural Department, has received gratifying information in regard to several important cereals introduced by him from Europe last year. Among these, the white Schomen oats promise to be a great acquisition; also the white Tappahannock wheat, a plump, white grain, which makes excellent flour, and, being ten to fourteen days earlier than any other variety, escapes the ravages of the fly. As it succeeds well in all parts of the Union, its general cultivation, it is thought, will have an important bearing on the aggregate and quality of the wheat crop. The Commissioner is anxious that all farmers to whom seeds have been sent the past season should report to the Department the results of their experiments.

The Grape Crop—Short Yield.—The *Alta*, in speaking of the present season's grape crop, says: "Notwithstanding the fact that at least a million of vines have came into bearing this year, and twice as many others, on account of increase of age, will bear twenty per cent. more than they did last year, the grape crop of 1869 will be less than that of 1868. This season follows one of extraordinary production, after which a small or moderate crop was to be expected. A very large yield always exhausts vines, and they need a twelvemonth to recover. The bunches which were blistered by the sun, some weeks ago, may be regarded as lost. The mildew or oidium has appeared in many vineyards, and has not been checked by the application of sulphur, as it might have been. Next year more attention must be given to the matter, or serious loss may result. It is said that there is no mildew on the leeward side of dusty roads. The dust seems to have the same preventive and curative influence as flowers or sulphur. The oidium first shows itself in little black spots on the new shoots; and as soon as these appear, the remedy should be applied. The grape fly is doing some damage in Sonoma."

The Wine Crop of Europe, reckoned at only twenty-five cents per gallon, aggregates over $800,000,000, annually, and is produced from 12,200,000 acres of land.

Frost in Valleys.

When any portion of the air is cooled it becomes heavier than the surrounding atmosphere; and, if this occurs upon a hill-top or side, the cooler air immediately runs down the slope, and forms, as it were, a lake of cool air in the valley, the warmer air rising to give it place. This is of very common occurrence, from the fact that hills are more exposed than valleys to winds or moving currents of air, which are generally cooler than still air. The coldness of the air in valleys is also still further increased from the fact that the dark and porous soil which is generally found in such localities radiates heat faster than the gravelly and more compact soil of the hills. A knowledge of these facts should teach the farmer the importance of selecting elevated places for fruit trees or any other crop liable to be injured by the frost. They also explain the reason why the muck or peat of drained swamps, or other similar land, is more subject to frosts than sandy or gravelly soil at the same elevation and subject to the same exposure.

Corn, especially in this State, where the nights are always cool, should never be planted in the lowest part of a valley; for in such locations it is more liable to be injured by early and late frosts.

The city of San Francisco is greatly diversified by hills and valleys, affording frequent opportunities for noticing the phenomena alluded to above. The moisture in the atmosphere of the lower portions of the city is often so much condensed as to render the streets and sidewalks there quite wet; while the pedestrian, by walking up the slope of any neighboring hill, will soon find himself treading upon a perfectly dry pavement. The white hoar frost, sometimes seen in this city in spring and autumn, is almost exclusively confined to its lower portions.

People in a rolling country will often notice in the early morning little isolated patches of fog here and there over the land. That fog covers precisely the localities which would be occupied with water if the country was partially submerged by that element, and those localities are the ones where frost is sooner and latest seen. Farmers should notice and carefully mark such localities, and avoid planting therein any fruit or vegetables which are liable to be injured by light frosts.

Sugar from Pumpkins.—An excellent quality of sugar is made from the common field pumpkin, in Hungary, where several large factories have been in operation since 1837. The process is the same as that employed in the beet sugar manufacture.

What Careful Cultivation will Do. An English farmer, by picking over his seed-wheat with the utmost care, and planting a grain in a place, at intervals of a foot each way, produced 162 bushels to the acre.

The Japanese Colony, near Placerville, is said to be progressing in a most satisfactory manner. The tea and mulberry plants are flourishing finely. The remaining members of the colony, 200 in number, will soon arrive from Japan.

Imported Sheep.—The Butte *Record* says that Mr. G. L. Hamlin has recently returned from the East with nine Cotswold Sheep, two of the Lester and one of the Lincoln breed—all fine animals.

Big Beet.—Santa Barbara has produced a mangel-wurzel beet, this season, which weighs 51 pounds.

The Light of Uranus.—This planet emits light which differs from that of any other of our system. According to Father Secchi, its spectrum exhibits broad absorption lines. The surface modifies the sun's light which it reflects, in the same manner as do colored bodies.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, September 4, 1869.

Financial.

Our financial condition has been considerably improved during the past week, and money is no longer unobtainable. Coin disbursed in the interior for domestic produce is beginning to find its way back to be employed again, and bills of exchange for exported grain are becoming quite plentiful. Savings Banks deposits are on a larger scale and the market has greatly recovered from its late stringency. The election interfered greatly with all kinds of business, but the spasm being over, trade and finance will resume their normal channels. Material reductions have been made on the price of passage between this city and the East, and there is good ground to hope for a large and valuable additiou to our population.

The Pacific Mail Steamship Company now charges but $100 in the first cabin and $50 in the steerage, the second cabin arrangement having been dispensed with. The Union Pacific Railroad and the other Eastern railroads connecting with it at Omaha, have not acceded to the proposition of the Central Pacific Railroad to place immigrant cars on the route and fix the rate of passage at $50 in currency, but have agreed to reduce fares on second class cars to $45, coin, to Chicago and $55 to New York, while the charges on first class cars have been reduced to $97 50, gold, to Chicago and $112 50 to New York.

Real Estate transactions for August, according to Carter's *Circular*, were as follows: number of sales made, 375, representing $1,139,416; number of mortgages effected, 245, involving $861,690; number of releases, 118, amounting to $389,243. We quote the following from the same authority:

A few days ago, two Germans, who desired to secure a tract of 10,000 to 75,000 acres of land, called upon us. They had been appointed a committee by a number of their fellow-countrymen, who desire to secure a large tract of cheap rolling land, upon which they intend to form a German settlement, somewhat similar to that of Anaheim.

We are informed that a tract of 10,000 acres of land, situated on the southern border of Monterey County, near the old San Miguel Missiou, was lately purchased from the Government, by a land speculator, for $1 25 per acre. This tract is now partially used as a sheep range. But for scarcity of water it would he well fitted for that purpose. Even as it is, nearly one-half of the tract is suitable for grain-growing. Heretofore it was deemed impossible to raise grain on the dry Salinas Plaius. This season, however, a spaco ten miles square was planted in wheat and barley. The experiment has been successful, the grain having come up well, greatly to the surprise of the wisecares of the vicinity, who knew in advance that the experiment would be a failure.

Bullion is in rather light supply and the demand somewhat active. Gold bars are quotable at 850@860; silver bars sell from par to ½ per cent. discount; currency hills on Atlantic cities pay 31½@32 per cent. premium on gold; coin drafts, payahlo at sight, ¾ per cent. premium; telegraphic transfers, 1@1¼ per cent. premium; sterling exchange, 48¾d; commercial exchange, 49¾@49½d; Mexican dollars, 6½@7½ per cent. premium; gold in New York, September 3d, 135¾; legal tenders in San Francisco, 73¾.

The near approach of our regular rainy season will give Eastern visitors an opportunity to enjoy our climate under its most delightful condition, and impart a sense of gratification that will probably result in sending thousands to us instead of to Cuba and Europe during winter. We have always entertained the opinion that facility of transportation was the only thing needed to render California the coveted winter ahode for the wealthy classes of ice-hound Eastern localities. Invalids will also seek it with the same avidity they have heretofore sought southern Italy. One winter passed in this State will settle the question for thousands, and must result in great benefit to all classes of our trades people.

The exports of Treasure from Aug. 1st to date have been as follows:

Aug. 4—Per Oregonian—		
To China	$346,913 30	
To Japan	326,403 93	
		673,377 23
Aug. 1 to 5—Overland to New York		63,246 65
Aug. 9—Per Sacramento—		
To New York	$ 48,047 15	
To England	448,887 83	
To Central America	161,625 42	
To Panama	20,000 00	
		679,660 40
Aug. 6 to 11—Overland to New York		86,503 33
Aug. 18—Per Golden City—		
To France	$260,290 47	
To Central America	10,000 00	
To Panama	10,000 00	
		280,290 47
Aug. 12 to 19—Overland to New York		20,000 00
Aug. 20 to 27—Overland to New York		25,000 00
Aug. 30—Per Montana—		
To New York	$ 8,000 00	
To England	412,578 64	
To Panama	9,000 00	
		429,578 64
Aug. 28 to Sept. 2, overland to N. Y.		125,700 00
Total since August 1st, 1869		$2,383,356 72
Previously this year		23,616,473 70
Total since January 1st, 1869		$25,999,830 42
Corresponding period, 1868		26,987,496 85
Decrease this year		$ 987,665 43

The duties paid at the Custom House in this city from August 27th to date have been as follows:

August 27	$29,416 36
August 28	15,638 81
August 30	20,469 80
August 31	12,030 83
Previously in August	$691,953 76
Total in August	$769,589 56
September 2	54,306 88
In July	942,814 71
In June	675,051 81
In May	576,039 24
In April	551,882 05
In March	780,447 40
In February	602,340 00
In January	532,997 97
Total since January 1st, 1869	$5,487,469 62
Corresponding period, 1868	5,772,389 78
Decrease this year	$284,929 16

The following table shows the relative value of a Currency Dollar to Coin, at the different rates of Premium, from one hundred to two hundred. The fractions given are as near as they can he approached, without the aid of parts of mills, and for all practical purposes will be found sufficiently accurate:

Principal.	Currency.	Principal.	Currency.	Principal.	Currency.
101	99	126	79⅜	151	66⅛
102	98	127	78¾	152	65¾
103	97	128	78⅛	153	65⅜
104	96⅛	129	77½	154	65
105	95⅛	130	77	155	64½
106	94⅜	131	76⅜	156	64⅛
107	93½	132	75⅞	157	63⅝
108	92½	133	75½	158	63¼
109	91¾	134	74⅝	159	62⅝
110	90⅞	135	74	160	62½
111	90	136	73⅝	161	62
112	89¼	137	73	162	61⅞
113	88½	138	72½	163	61⅜
114	87¾	139	72	164	61
115	86⅞	140	71½	165	60⅝
116	86⅛	141	71	166	60⅛
117	85½	142	70⅝	167	59⅞
118	84¾	143	69⅞	168	59½
119	84⅛	144	69½	169	59⅛
120	83⅓	145	69	170	58⅞
121	82⅝	146	68½	171	58½
122	82	147	68	172	58⅛
123	81¼	148	67⅝	173	57¾
124	80⅝	149	67	174	57½
125	80	150	66⅔	175	57⅛
176	56¾
177	56½
178	56⅛
179	55¾
180	55½
181	55¼
182	55
183	54½
184	54⅓
185	54
186	53¾
187	53½
188	53¼
189	53
190	52¾
191	52⅝
192	52¼
193	51⅞
194	51½
195	51¼
196	51
197	50¾
198	50½
199	50¼
200	50

City Stocks.

For the week nnder review we noto sales of North Beach and Mission Railroad at $69. The usual monthly dividend of this company was paid on the 1st inst.——San Francisco Gas stock realized $83@83 50. The usual ½ per cent. dividend was disbursed on the 1st.——California Steam Navigation Co. at 53 per cent.——Spring Valley Water Co. at $61 per share.——Twenty shares of Pacific Insurance Co. stock sold at $110 per share.——The Pacific Bank dishursed its usual dividend of 1 per cent. for the month just closed.

Mining Share Market.

During the period intervening since our last reference, the mining share market has improved considerably, and the sales making were quite large; however, a general apathetic feeling pervades the market, through the scarcity of available cash means with which to operate. Both in the Comstock and White Pine claims nothing has transpired to produce greater activity and better prices, though their intrinsic merits seem to warrant an improvement.

HALE & NORCROSS—sold at improved prices. For the week ending August 28th, the upper mine yielded 264½ tons of ore, and the lower 1,078½, making a total yield of 1,342½ tons. During the same time they delivered 821 tons for reduction, keeping on hand at the dump 1,294½. In drifting westward on the fifth floor of the fifth level, fifty feet south of the northern boundary line, they have reached the west vein, hut owing to the flow of water were compelled to stop and allow it to drain off. The character of the vein has not yet been ascertained. In the upper mine they find great difficulty in opening the 600 level, being more difficult to work than new ground. On the 400 level they continue to sink the winze, having carried it down fifty feet, the average width of vein being 2½ feet, and showing average assays for the week of $70 to the tone. The north drift on the vein, same level, continues without change.

CHOLLAR-POTOSI—was in the market to a considerable extent at a slight improvement. During the week ending August 27th, they extracted 1,540 tons of ore, of which amount the Blue Wing stope contributed 1,000, the New Tunnel 237, and the Grass Valley 253 tons. We learn of no change in the Blue Wing, while the New Tunnel shows a good quality in the northern portion, and the Grass Valley considerahle improvement. On the 27th, $33,828 in hullion was sent forward to this city.

GOULD & CURRY—has been in slight request. During the week ending August 30th, 265¾ tons of ore were taken from the upper chambers of the mine, which gives an average assay of $39 20 per ton. The second station drift is within fifty feet of the shaft that connects from the main adit, which will shortly ho completed, adding considerably to the present production of the upper levels. At the seventh station the drift going southeast is in 45 feet, with no change in the material. They have started a drift northward. The hullion receipts to date for the month of August nggregate $18,573.

OPHIR—is quiet. The drift is going ahead at the rate of two feet per day, running in hard rock. On the 30th of August it had attained a distance of 663 feet.——OVERMAN is less active than last week. For the week closing August 28th, 262 tons of ore were extracted, showing an approximate value of $5,240, or $20 per ton. They had on hand at the dump 385 tons.

In White Pine stocks there is not much doing. From the *News* of August 28th we cull the following:

AURORA CONSOLIDATED.—Having come into possession of the Earl mine by purchase during the last week, this company is now shipping a large quantity of high grade ore from the Earl shaft. This is an important addition to the property of the company, and cannot fail to enhauce the value of its stock.——CONSOLIDATED CHLORIDE FLAT has increased its working force to 125 men, and is now sending 50 tons of ore to mill daily for reduction.——ECLIPSE CONSOLIDATED has struck a body of high grade ore 12 feet thick, in their shaft, at the depth of 112 feet. A drift has been run several feet eastward, revealing an excellent quality of ore; and next week drifts will be run in other directions, to ascertain the course of the vein. This is a horizontal vein, with a good hottom or foot wall, inclining slightly to the south. This strike is considered the most important development made here for many months, indicating, as it does, greater depth and permanency to our mines than many are willing to believe.——INDUSTRY continues taking out some very good ore. The usual number of men are employed. About 30 tons of ore shipped the 6th. A dividend of $4 per foot will be paid on and after this week.——MAMMOTH is employing 13 men. Its fine vein, 5 feet in thickness, is being worked in the east shaft. The work is also progressing in the Shehoygan incline, and some very good ore coming out.——VIRGINIA is taking ore from the north chamber only, hut that is of a very high grade. The Newark mill is now engaged upon ore from this mine, the pulp of which assays much higher than the ore milled last month.——ORIGINAL HIDDEN TREASURE levied an assessment of $2 per share on the 28th of August last.

STAINING WOOD BROWN.—Dr. Stozel first paints over the wood with a solution made by boiling one part of catechu (cutch or gambier) with thirty parts of water and a little soda. This is allowed to dry in the air, and then the wood is painted over with another solution made of one part of bichromate of potash and thirty parts of water. By a little difference in the mode of treatment, and by varying the strength of the solutions, various shades of color may be given with these materials, which will be permanent, and tend to preserve the wood.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location, Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Cons., Sierra co., Aug. 6, 50c	Sept. 7	Sept. 23
Black Jacket, White Pine, Aug. 18, 10c	Sept. 17	Oct. 21
Bucklin, White Pine, July 14, 5c	Aug. 21	Sept. 10
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Brodt, White Pine, Aug. 23, 25c	July 29	Sept. 4
Bromide Flat, White Pine, July 12, 50c	Aug. 13	Sept. 2
Bullion, Storey co., Nev., Aug. 21, $10	Pay. immediately.	
Chiplencsa, Sonora, July 26, $2.50	Aug. 26	Sept. 11
Cordilera, Mexico, July 23, $1	Aug. 24	Sept. 8
Central No. 2 Storey co., July 14, $6	Aug. 16	Sept. 4
Crown Point, Storey co, Nev., Aug. 6, $5	Sept. 9	Sept. 25
Daney, Lyon co., Nev., Aug. 5, $1	Sept. 8	Sept. 26
Eclipse Cons., White Pine, Aug. 11, 50c	Sept. 16	Oct. 8
Etna, White Pine, Aug. 27, 10c	Sept. 30	Oct. 21
Evening Star No. 1 White Pine, Aug. 25, 10c	Sept 23	Oct 15
French, White Pine, July 19, 5c	Aug. 24	Sept. 13
Glenwood, El Dorado co., Aug. 2, 3c	Sept. 8	Sept. 28
Geo. Washington, White Pine, July 1, 10c	Aug. 12	Sept. 9
Hope Gravel, Nevada co., Aug. 8, $1	Sept. 13	Oct. 4
Hornet, White Pine, July 24, 10c	Sept 8	Sept 30
Ion, White Pine, July 14, 10c	Aug. 19	Sept. 24
Imperial, Storey co., Nev., July 14, $5	Aug. 18	Sept. 8
Julia, Storey co., Nev., Aug. 4, 75c	Sept. 7	Sept. 25
Kincaid, Tuolumne co., Aug. 5, $2 50	Sept. 8	Sept. 25
Kentuck, Storey co., Nev., Aug. 5, $10	Sept. 6	Sept 25
La Plata, Sonora, Mex., July 8, 25c	Sept 13	Oct. 1
Metic Ledge, White Pine, July 16, 10c	Aug. 16	Sept. 6
Lyon M. & M., El Dorado co., July 21, $2	Aug. 30	Sept. 20
Mammuth, White Pine, July 16, 50c	Aug. 21	Sept. 13
Maxwell, Amador co., Aug. 14, $1	Sept. 16	Oct 12
Mazeppa, White Pine, June 30, 10c	Aug. 5	Sept. 11
Magenn, White Pine, June 24, 10c	July 29	Sept. 4
Mammoth Cave, White Pine, July 12, 10c	Aug. 19	Sept. 23
Morning Star, Alpine co., July 21 $1.50	Aug. 31	Sept. 16
Marlborough, White Pine, July 19, 5c	Aug. 24	Sept 13
North Bloomfield, Nevada co., Aug. 6, $5	Sept. 9	Sept. 25
New Era, Amador co., July 13 40c	Sale Sept 20	
Ophir, Storey co. Nev., July 23, $3	Aug 25	Sept. 16
Oriental, Sierra co., July 21, $3	Aug. 21	Sept. 6
Orig Hid. Treasure, White Pine, Aug. 8, $2	Oct. 4	Oct 23
Pacific Cons., White Pine, July 30, 10c	Sept. 8	Sept. 28
Pocotillo, White Pine, Aug. 2, $2	Sept. 6	Sept 27
Phoenix, White Pine, July 12, 15c	Aug 12	Sept 30
Ratcliffe, White Pine, Aug. 27, 50c	Oct. 1	Oct. 21
R. M. Co., Humboldt, Nev., July 27, 20c	Sept. 13	Oct. 1
Silver Wave, White Pine, Aug. 28, 20c	Sept. 24	Oct. 20
San Jacinto, Tin, San Bernardino co., Aug 20, 5c	Oct 4	Oct 18
Segregated Belcher, Storey co., Aug. 5, $1	Sept. 9	Sept. 29
Sierra, Douglass co., Nev., Aug. 28, $2	Sept. 28	Sept. 28
Silver Eagle, White Pine, July 14, 25c	Aug. 25	Sept. 15
Silver Sprout, Inyo co., July 27, 50c	Aug. 31	Sept 2
Taylor, El Dorado co., Aug. 25, 20c	Oct. 4	Oct. 20
Tecumseh, Calaveras co., July 22, $7 50	Aug. 24	Sept. 15
Treasure Grove, White Pine, July 27, 20c	Aug. 28	Sept. 18
Thunderbolt, White Pine, July 1, 5c	Aug. 12	Sept. 9
Virginia, No. 2 White Pine, July 21, 25c	Aug. 26	Sept. 14
Wells, White Pine, July 10, 30c	Sept. 17	Oct 7
West California, White Pine, July 16, 10c	Aug. 17	Sept. 25
Yellow Jacket, Storey co., July 19, $10	Aug. 13	Sept. 17

MEETINGS TO BE HELD.

Clear Lake Water Works	Meeting September 6
Pre-ns, Quicksilver	Annual Meeting, Sept. 15
Sarmania Cons	Annual Meeting, Sept. 15
IXL, Alpine co	Annual Meeting Sept. 9
Succar	Meeting September 6
New Era, Amador co	Annual Meeting, Sept. 13
Wmtello, White Pine	Annual Meeting, Sept. 17

LATEST DIVIDEND.

Amador Co., div. $8 per share	Payable August 7, 1869
Alpha Cons., Storey co., Nev., div. $2	Pay. any time since 1868
Bacon, Storey co., Nev., div.	Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12 1868
Chollar Potosi, div., $2	Payable August 6, 1869
Eureka, div. $5	Payable August 10, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Gould & Curry, div. $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 15, 1868
Golden Charlot, Alpine co., div. $10	Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c	Pay. Aug. 26, 1869
Hale & Norcross, div. $6	Payable July 10, 1869
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 1, 1869
Keystone, Sierra co., div. $32	Payable May 5, 1869
Kentuck, div., $20 per share	Payable Jan 10, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Consolidated	Payable June 18, 1868
Saml Spring Salt, dividend $1	Payable Jan 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec 19, 1868
Savage, Virginia, Nev, dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 25c	Payable August 10, 1869
Virginia & G. H. Water Co.. Dividend, payable April 16, 1869	
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, September 4, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	S —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 6 20s, 1862	87	89
Legal Tender Notes	73¾	74
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par	& Int.
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par	& Int.
San Francisco City and Co. Sch'l Bds, 7s, 1865	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds. 7s, 1864	89	90
Sacramento City Bonds, 6s	25	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	—	55
State Telegraph Co	25	—
Spring Valley Water Co	60½	61

GAS COMPANIES.

San Francisco Gas Co	83	83½
Sacramento Gas Co	52	54

RAILROADS.

Sacramento Valley Railroad	—	—
Omnibus Railroad	67	69
Central Railroad	56	—
North Beach and Mission Railroad	—	68½
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—

INSURANCE COMPANIES.

Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	91
People's Insurance Company	90	95

BANKING INSTITUTIONS.

Pacific Bank	97½	100
The Bank of California	150	160

MINING STOCKS—WASHOE DISTRICT.

Alpha	15½	17
Baltimore American	—	—
Belcher	18	19
Bullion, G. H.	11	—
Crown Point	27	28
Cole (Va.)	—	—
Confidence	—	—
Consolidated Virginia	—	—
Chollar-Potosi	19	19¾
Daney	¾	1
Exchequer	9	10
Empire Mill and Mining Co	33	—
Gould & Curry	83	85
Gold Hill Quartz	33	35
Hale & Norcross	120	121
Imperial	46	50
Julia	½	2
Jessie Gold Independent	—	8
Kentuck	185	188
Lady Bryan	—	—
American	31	31¼
Occidental	14	15
Ophir	17¾	18
Overman	68	68
Segregated Belcher	9	10
Savage	52¾	53
Sierra Nevada	6¾	7
Union	—	—
United States	—	—
Yellow Jacket	46¾	47

MISCELLANEOUS MINING STOCKS.

Amador (California)	285	300
Aurora, White Pine	6	10
Eureka, (California)	290	—
Golden Chariot (Idaho)	31	31¾
Silver Cord (Idaho)	1	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, September 3, 1869.

Flour, Extra, ₱ bbl	$5 50	@$5 75
Do. Superfine	4 25	@ 5 00
Corn Meal, ₱ 100 lbs	2 00	@ 2 25
Wheat, ₱ 100 lbs	1 05	@ 1 65
Oats, ₱ 100 lbs	1 25	@ 1 50
Barley, ₱ 100 lbs	90	@ 1 35
Beans, ₱ 100 lbs	3 50	@ 5 00
Potatoes, ₱ 100 lbs	75	@ 1 10
Hay, ₱ ton	8 00	@13 00
Live Oak Wood, ₱ cord	9 00	@14 00
Beef, extra, dressed, ₱ lb	7	@ 9
Sheep, on foot	2 50	@ 3 00
Hogs, on foot, ₱ lb	5	@ 7
Hogs, dressed, ₱ lb	9	@ 10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14¼	@ 14¾
Do. China	10	@ 11
Coffee, Costa Rica, ₱ lb	—	@ 20
Do. Rio	—	@ 19
Tea, Japan, ₱ lb	75	@ 90
Do. Green	60	@ 1 25
Hawaiian Rice, ₱ lb	9¾	@ 10
China Rice, ₱ lb	5½	@ 6
Coal Oil, ₱ gallon	43	@ 45
Candles, ₱ lb	16	@ 18
Ranch Butter, ₱ lb	40	@ 50
Isthmus Butter, ₱ lb	30	@ 33
Cheese, California, ₱ lb	15	@ 17
Eggs, ₱ dozen	60	@ 5 75
Lard, ₱ lb	16	@ 17
Ham and Bacon, ₱ lb	14	@ 17
Shoulders, ₱ lb	8	@ 9

Retail Prices.

Butter, California, fresh, ₱ lb	50	@ 60
do. pickled, ₱ lb	30	@ 40
do. Oregon, ₱ lb	25	@ 30
do. New York, ₱ lb	35	@ 40
Cheese, ₱ lb	20	@ 25
Honey, ₱ lb	25	@ 30
Eggs, ₱ dozen	60	@ 70
Lard, ₱ lb	18	@ 20
Ham and Bacon, ₱ lb	20	@ 25
Cranberries, ₱ gallon	1 00	@ 1 25
Potatoes, ₱ lb	1¾	@ 2
Potatoes, Sweet, ₱ lb	3	@ 5
Tomatoes, ₱ lb	3	@ —
Onions, ₱ lb	3	@ —
Apples, No. 1, ₱ lb	4	@ 5
Pears, Table, ₱ lb	5	@ —
Plums, dried, ₱ lb	10	@ 12
Peaches, dried, ₱ lb	10	@ 15
Oranges, ₱ dozen	50	@ 60
Lemons, ₱ dozen	—	@ 1 00
Chickens, apiece	75	@ 1 00
Turkeys, ₱ lb	30	@ 35
Soap, Pale and C. O	7	@ 12
Soap, Castile, ₱ lb	18	@ 20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, September 3, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1¼c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1¾@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2½c ₱ lb.

Scotch and English Pig Iron ₱ ton	$35 00	@$36 00
White Pig ₱ ton	34 00	@ 35 00
Refined Bar, bad assortment ₱ lb	— 03	@ —
Refined Bar, good assortment, ₱ lb	— 04	@ —
Boiler, No. 1 to 4	— 04¾	@ —
Plate, No. 5 to 9	— —	@ — 04¾
Sheet, No. 10 to 13	— 04¾	@ — 5
Sheet, No. 14 to 20	— 05	@ — 5¾
Sheet, No. 24 to 27	— 05	@ — 5¾

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb

Sheathing, ₱ lb	— —	@ — 26
Sheathing, Yellow	— 20	@ — 21
Sheathing, Old Yellow	— 10	@ — 11
Composition Nails	— 21	@ — 22
Composition Bolts	— 21	@ — 22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@ —
Plates, I C Charcoal	10 00	@ 10 50
Roofing Plates	10 00	@ 10 50
Banca Tin, Slabs, ₱ lb	— —	@ — 35

STEEL.—English Cast Steel, ₱ lb — — @ — 15

Quicksilver—₱ lb	— 55	@ — 60
LEAD.—Pig, ₱ lb	— 7½	@ — 8
Sheet	— 10	@ —
Pipe	— 11	@ —
Bar	— —	@ — 9
ZINC.—Sheets, ₱ lb	— 10½	@ — 11
BORAX.—California, ₱ lb	— 45	@ — 50

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Sept. 3, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

		Per ton.			Per ton.
12	per cent. ore	$16 00	22 per cent. ore		$43 56
13	" "	18 62	3 " "		46 45
14	" "	20	20 24 " "		49 33
15	" "	23	25 25 " "		52 22
16	" "	26	2 26 " "		55 11
17	" "	29	12 27 " "		58 00
18	" "	29	91 28 " "		60 80
19	" "	34	90 29 " "		63 77
20	" "	37	78 30 " "		66 66
21	" "	40	67 31 " "		69 55

These prices, we believe, will be found substantially correct, and can be realized at this date.

Do you admire Elise Holt? Have you examined her features through one of Muller's opera glasses? If you have not, you have no right to pronounce an opinion.

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CENTRAL AMERICA Mahogany has been introduced here by Hobbs, Gilmore & Co., being found cheaper than the Eastern.

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Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Pennsylvania.—*Chronicle*, Aug, 21st: The annual report of the Supt. closes thns: "I believe we now possess a good mine, and see no reason why the Company shonld not make an exertion to procure a mill as soon as possible."

Globe.—*Miner*, 21st: In this tnnnel the back-set occasioned by the cave is now overcome and some good developements are daily expected.

CALAVERAS COUNTY.

Coffee Mill.—*Chronicle*, 28th: We have been shown a couple of nnggets from the Coffee Mill claim, weighing $21 and $28. These are the first "indications" that the mine contains coarse gold. Mr. Gleason informs us that the first "clean up" resnlted satisfactorily. The "incline" has been retimbered throughout. Mr. Gleason is employing a large nnmber of hands.

Good "Clean Up."—One hundred and nine ounces of gold were taken from one sluice hox in Clark'a great hydraulio claim in Railroad Flat this week. There are 300 boxes in the claim.

KERN COUNTY.

Rich Discovery.—Havilah *Courier*, 17th: Mr. S. O. Remington gives ns intelligence of a discovery made by him, six or eight miles from Sageland. The lead is from four to five feet in width, and contains both gold and silver.

NEVADA COUNTY.

You Bet.—*Transcript*, Judge Brown is working two shifts and running night and day. He is employing 16 men and is taking out ahout $2,500 per week. Neece & West are running a bedrock tnnnel in order to get the proper fall to work the blue lead, and are getting along finely. They let off a hlast last week of 280 kegs powder, and it did its work beautifully. The prospect is now that these claims will pay better than they ever did before. Ed. Williams is rnnning a bedrock tunnel, and expects to get it completed this fall. He is employing 20 men. W. H. Duryea is also repairing his claims for winter, and the prospect is that You Bet is going to he very lively.

Little York.—Little York Co. are running three sets of hydraulic claims, and using 250 inches of water per day. They give employment to 60 men, and are taking ont on an average $3,000 at each run of ten days. These claims are owned hy W. W. Cozzens, of You Bet, and Mr. Briggs, of San Francisco. The same company are also running a bedrock tunnel 6½x7 feet. They are in about 200 feet.

Washington.—The town is rather dull. Battis & Co. have struck good pay and coarse gold since they have changed the direction of the drift, and it is said they will take out $600 in a week.

Harroun & Co., and Root & Co. are at work at Rocky Bar, where a few years ago a very large amount of gold was taken out from the old river channel.

A Portuguese company is at work opposite town, and several Chinese companies are working the bed of the river below.

The Cascades.—In the Spring Slide claim, owned by Irish & Reagan, a tnnnel is heing driven and fine prospects are obtained. The Red Diamond is now in charge of John Goodman, and he is getting ready for hydraulic work, when the next season opens. The gravel prospects a dollar and a half per pan in some places. At Bnrrington Hill, Stranahan has been doing considerable work aud getting good pay. The prospect in this vicinity is exceedingly good.

Omega.—At Omega the mining season is about over, the supply of water being ahort. Dnring the short season most of the mines have done well and given employment to a number of men. Kidd & Co. are still working the old Prescott claims and are getting good pay.

Diamond Creek.—Curtley, in his claims has done first rate, and has them fitted up in good style for the next season. Van White & Co. also have a promising set of diggings.

The Salathiel is yielding good quartz. Upon the claim is an 8-stamp quartz mill, run by an engine called the Little General. The machinery is so compact that the whole arrangement might he placed in a good sized store box. The engine burns abont two cords of wood per day, and the mill crushes about 12 tons. The tnnnel is in 200 feet.

The North Bloomfield Co.—Bowman's ranch has been purchased by the company for the site of the new reservoir. Four hundred and fifty men are now employed, and every department of the labor, such as fluming, blasting, hewing timbers, etc., is under the management of competent men.

Kansas.—Same of 27th: This company has heen working for 13 months in search of the old lead of pay gravel on Selby Hill, and have strnck it. They will now commence a new incline to open the channel.

Rich Strike.—Mr. Coe says that a company in which he is interested made a rich strike in Steep Hollow, 18 miles from this place. The claims are drift diggings, and the main tunnel paid the expenso of running it. In the side drifts very rich pay was struck in the channel, the gold being coarse and so abundant as to remind one of '49 times. The gravel in these side drifts pays so well that the yield is as high as $50 per day to the hand. The claims are on the same range as the Burrington Hill claims.

Bridgeport.—Same of 28th: A contract has been entered into hetween an English company and Stidger, Evans & Co., whereby the latter agree to sell to the former all of their claims on Buckeye Hill for $200,000. The transfer will be made, and the money paid, it is thonght, in 90 days..... One day last week Henry Sweetland struck a splendid lead of gravel in his claims... At San Juan Hill several claims are heing put in order, and more mining will be done there during the coming winter than in a long time.

Eureka.—*Gazette*, 25th: We learn that this district is not lively. The Mutual Co. on the Jim ledge is setting a good example, and the prospects are that other companies will go down deeper. The Mutual has a shaft down 50 feet helow the tunnel and the tnnnel is 125 feet helow the surface.

Pittsburgh Mine.—Same of 26th: We are gratified to state that satisfactory arrangements, hetween the owners and the employés, have been made, and that work will go on as usnal.

Pleasant Valley.—The people are agaiu getting excited over qnartz, and beginning to prospect. T. C. Bourne sends us specimens from a ledge which he has lately discovered, that prospects finely.

The *Gazette* of the 27th says: A report was in circulation yesterday that the gravel mine at the head of Steep Hollow, owned hy White, Coe, and others, was yielding a hundred dollars a day to the hand.

PLACER COUNTY.

Good Prospect.—*Stars and Stripes*, Aug. 26th: Messrs. Hayford, Himes and Melville, whose claim is on Rich Bar, near Rice's bridge, on the north fork of the American river, ahout two miles from Colfax, strnck a good prospect on the 10th inst. From one pan of gravel $212.50 worth of gold was obtained. Last year the same claim was worked by other parties, and paid an average of $20 per day to the hand.

SIERRA COUNTY.

Hydraulicing.—*Messenger*, 28th: Alpaugh, Fritz & Ney, of the hydraulic claims between Pike City and Plum Valley, intend drifting hereafter. The claims have paid richly this season; hnt the tenacious clay rohs them of too much gold by the piping process. They have a rich deposit of unknown extent, the hottom gravel of which yields from 50 cents to $2 per pan.

Alaska Co.—The following, from an authentic source, exhibits the operations of the Alaska Quartz Mining Co. during the past 12 months. Number of stamps, 5; crushing capacity per day of 12 hours, 4½ tons; whole uumber of days run, 270; whole number of tons crushed, 1,200; cost of mining and milling per ton, $12; average yield per ton, $38; net profit per ton, $26.

South Sierra.—At Alleghany, several companies are at work. The Highland & Masonic hoys are pushing ahead their work to advantage. On the other side of town, the Alleghany Consolidated, the Blue claims and others are steadily at work. Jim Thomas aud others recently took ont of their claim here a nice little chispa weighiug 11 pounds.

Mr. Stevens, Secretary of the Oak Flat mine, informs us that they have temporarily suspended operations, but will resume work in a few days.

SISKIYOU COUNTY.

Slate Creek.—Yreka *Union*, Aug. 28th: We learn that new discoveries have been made lately hy the miners of Slate Creek and that capitalists from San Francisco are engaged in turning the Sacramento River near the mouth of this creek. Something near a hnndred miners are now working in this locality.

TRINITY COUNTY.

The Corral Diggings.—*Journal*, Aug. 28th: A gentleman from lower Trinity informs us that hut little has yet been done toward developing the newly-discovered mines on Corral creek, because of the scarcity of water. Those having claims are waiting anxiously for the fall rains. Our informant states that the day hefore he started an ounce was taken out of Clifford & Co's claim by two men with a rocker.

Low Water.—Trinity river is lower than ever hefore known. Miners out of employment should take this fact into serious consideration. Any unworked spot on the river is pretty snre to pay good wages, and it is in just such streams that large sums of money are taken out in a few days.

Arizona.

Rich Pay Dirt.—Prescott *Miner*, Aug. 20th: A. French, and others, fonnd, recently, on top of Bradshaw mountain, dirt that prospected all the way from three to fifty cents a pan, but as there was no water, they could not work it. Jackson & Co., are having a shaft sunk on the Box Elder lode, at Walker's, out of which they have taken some very rich .rock. Uncle Billy Pointer was also taking good rock ont of his lode.

Sterling.—Chas. Borger, the only gentleman here capable of running the mill and chlorination works, has quit. In all probability work will cease nntil the arrival of some one from San Francisco capable of filling Mr. B's place.

Prospectors.—Saturday there assembled in Miller's Valley, a short distance from Prescott, some 28 men who propose starting, soon, to prospect the region to the northwest of the San Francisco Mountain.

Gold Product.—In reports, Arizona is credited with producing, annually, $500,000, in gold, when, the truth is, she produces nearly double that amount. Why, the Vnlture mine, near Wickonburg, in this county, produces nearly $500,000 per annum.

Colorado.

Hoosier.—Boulder *Pioneer*, Aug. 17th: Samples of the ore, one of which is in our possession, look exactly like the richest specimens from the Terrible lode, Georgetown. One shot last Saturday threw out 400 pounds of this ore, and disclosed a continuous vein of it three inches wide, following down the south wall. In the center of the shaft large kidneys, from 50 to 100 pounds in weight, of this same ore are found.

California Gulch.—Denver *News*, 18th: Mr. Henderson is working eight men and taking out $5 per day to the man; Mr. Floyd, five men, $7 per day; Mr. Star, six men, half an ounce; Mr. Huey has just hegun working; Mr. Bard, working three men, has made no clean-ups; Caruth & Hilton, seven men, taking out $5 per day to the man; Graham Bros., five men, half an ounce per day; Leahy, Graham & Co., two men, taking out good pay; A. Y. Corman is making wages; Thompson & Gurley, four men, taking out $10 per day to the man; Wells & Moyer, four men, taking out wages; J. J. Hoover, six men, taking out $7 per day.

Cash Creek.—The Gaff Co., on acconnt of the scarcity of water, are now employing only seven men. They are taking out from $3 to $10 per day to the man. Mr. Snyder is working four men, and taking out about $12 per day. In Willow Gulch, Moses, Willett & Co. are working five men, and taking ont good pay.

Granite District.—Quartz.—The principal operations are being carried on by the Niagara and Yankee Blade Co's. The Niagara property consists of the Wateree, Monarch, Dowser, Tene Virta, Grand View and Empire lodes. On four of them shafts have been sunk 50 feet and upward. They also have feet on several other lodea not opened, and own two water powers on the Arkansas river. Their mill of nine stamps is on Low Pass creek. Several runs have been made from the Hattie Jane lode, prodncing from $400 to $800 per cord; 4¾ cords mixed surface ore from the Solux Tiyee lode producing $473; one-half cord from the Monarch lode, owned hy the Co., taken ont while prospecting the lode, yielded five ounces retort, worth $90; 3¼ cords aurface ores from various lodes, raised and crushed at an expense of $273, produced in the aggregate $432. The result of the last run of the mill, 9¼ days, was a production of $1,302.50, at a total expense of lesa than $1,000. The Yankee Blade shaft is 125 feet deep. A large amount of rich ore is out. A mill, containing 15 stamps, has been erected on the Arkansas.

Summit County—Gulch Mining.—There are five companies at work in French Gulch, three of which have not yet reached bed rock. C. P. Clark is working eight men, and Ladd, Todd & Co. five, and both are taking out good pay.

On Stilson's Patch, Mr. McFaddeu is putting in a large flume. Martin & Co. are working seven men, and McDonald & Co. two men. Both are taking out pay, the last clean-up of Martin & Co. being three pounds of gold.

In American Gulch, Hitchcock & Co. are working three men. In Humbug Gulch, Carter & Page are taking out $15 per day to the man. Mr. Iverson is working two men, and taking out pay. In Georgia Gulch, Mr. Clay is working three men; Mr. Boylan, three men, and taking out $12 per day to the man; and Hitchcock & Co. three men.

At Delaware Flats, Mann & Lane are working four men, and Stogsdill & Davenport, five men. Both companies are taking out good pay. In Gold Run, the following companies are at work: G. W. Mumford, seven men and three hydraulics; J. Nolan, five men and one hydraulic; L. Peahody, seventeen men and three hydraulics; M. Coatney, four men and one hydraulic; Moffat & Shock, ditto; and S. M. Walker, ditto. All are taking out large pay.

Iowa Gulch is worked by Stahl, Tuhhs & Co. in a systematic manner, and good pay taken out. McNulty Gulch pays largely. Christian & Turuer are taking large pay from Galena Gulch, as are Pollock & Co. from Soda Gulch. Pierce & Co. are working successfully in Corkscrew Gulch, as is also Mr. Hildebrand. On the Blue, Mr. Clack is making pay, and other varties are opening claims. Work is being done in Illinois Gulch, and also on Ten Mile.

Idaho.

Mining Items.—Silver City *Wave*, Aug. 24:—The Goldeu Chariot has on hand 200 tons of very rich ore, much of it showing free gold....Peck and Porter's shaft is being timbered....Corduroy has a large pile of ore on the dump. So has Billy Reynolds....Starlight have struck a three foot ledge forty feet down, containing a large proportion of decomposed quartz, said to prospect well. We were shown a specimen of solid quartz showing black sulphnrets in considerable quantity....Very rich rock now coming out of the Red Jacket. The Poorman is not yielding ore so ahundantly as in former years, though they are going after it with tunnels and crosscuts with a will.

Loon Creek Mines.—Correspondence of above: I made the trip from Oro Grande, the next town, 130 miles, in four days. Ahout fifteen miles of the creek has been located for har and creek, or rather river claims, as there are about 5,000 inches of water in the stream. These diggings aro on Loon creek, Lemhi county, about 120 miles from Leesburg. The largest prospect I know of is $1. I saw that; it was in two pieces. I have been told of $10 a day being made with a pan. Alexander Craig asnred me that he had obtained $17.96 to the pan. That I did not see. He also said he got $159 ont of a hole 4x4 feet, one piece weighing $8.

The New Diggings—Latest.—Boiso City *Statesman*, 24th: Joseph Boggs, who arrived in town last evening, furnishes ns with the following news: The diggings are distant from Placerville ahont 125 miles, via Deadwood. They cover a surface of twelve miles, consisting of creek and har claims, besides good gulch and hill prospects. He saw a lncky fellow take out $17 in one pan, and at another place a nugget worth $9 was found. The gold resembles the Blackfoot. Water is abundant; timber is rather scarce. Ahove five hnndred men are already there. Five hundred men from Montana were looked for daily. Mr. Boggs intends returning without delay.

Other Accounts.—Joe Pinkham writes from Idaho City: "Letters received last night from the new mines are very favorahle. Joe Gallatin Dr. Belknap and Dr. Betts, all report good mines and extensive. Thero are about fifteen miles of Loon Creek taken up, which prospects well, and another creek just struck, prospects not known. Joe Gallatin has ordered two more train loads of liqnors and merchandise."

The *Statesman* says: "The news is from nndoubted authority. We believe it fully. We have never before advised people to rnsh off to new excitements, but we now do most emphatically recommend our people to get ahead of the 'tother-siders from Montana and occupy the ground in advance.

Montana.

Through the Mines.—Virginia *Republican*, Aug 20th: G. F. Cope, reports at Cal

ifornia Gulch work progressing and miners satisfied. They were bringing in water from Granite Gulch. In Bevins' Gulch work was lively. The water from Ramshorn afforded every facility for mining, and results were large. In Rochester both mills were running, and the Julia Holmes, Watseka and Niff, among the best. The mills are doing well. Mr. Cope panned out several pans from the placers in Rochester gulch, obtaining not less than one dollar and twenty-five cents from five pans above bed-rock. Splendid rock is being taken from the Iron-rod, at a depth of 200 feet, in Upper Silver Star. The Green Campbell, at lower Silver Star, is the best lode developed in the Territory. The Horae Pans have arrived for the Everett mill. Davis' Bars, in Jefferson Cañon, promises well. Two bars, half a mile in length, have yielded to water thrown by a water-wheel, $10 per day to the hand. Two ditches are in progress.

CROW CREEK.—There were 300 men at work whenever they could get water. The placers are very rich. The Keaton lode has been sunk 100 feet. The vein is three feet in width and the rock yields $30 per ton by arastra,

Blacker is running two wooden stamps, on assorted rock, which produces $100 to the ton. He intends putting up a large mill next winter.

The Robert E. Lee lode is worked by Nave, who gets from average ore, with an arastra, $73 per ton.

INDIAN CREEK.—Men are constructing drain ditches and working placers which pay from $80 to $100 to the set of timbers in the drift. They are also sinking on five lodes, which prospect from two bits to two dollars to the pan. It is proven that six or seven miles of the gulch will pay from $15 to $20 to the man per day.

NORWEGIAN.—Messlar is averaging $8 to $10 per day to the man. Clarke & Fletcher are encouraged with their prospects.

STERLING.—Hall & Spaulding keep their mill in operation. Appleton's mill is running night and day, and Mr. Jackson, at Ward's mill, is making preparation for an early resumption of work.

WASHINGTON.—Harris & James are doing a successful business. Their placers are extensive and the average from ten to twelve dollars to the man per day.

SILVER STAR.—N. J. Davis is interested with Fred. Root in the Golden Clipper lode. The lode has been excavated to the depth of fifty feet, and presents a crevice of from two to four feet in width. The quartz averages $40 to the ton.—Wyant, Ross & Co., are running an arastra on this lode, and crushing two tons of ore every twenty-four hours. Alex. Everson is working rock in an arastra, taken from the John Heffner lode, which has been worked to the depth of twenty five feet, and has a crevice of four feet, averaging $30 to the ton. Sam Holman has an arastra crushing ore from the Georgia lode, in Georgia gulch. This lode is developed thirty feet in depth, and averages $25 per ton, with a crevice of six feet in width. Four ounces per day of gold are taken by Aiaslee & Tripp, with their arastra, from the tailiugs of the Iron-rod lode.

MILL CREEK.—J. M. Bailey is running his arastra upon ore taken from mines in Mill creek, which yields from $15 to $20 per ton. Kit Bradley has leased the Bradley lode, and intends starting his quartz mill.

SUMMIT.—Major Postlewait is repairing his mill, preparatory to commencing work upon the Keystone lode. Work is progressing.

NORWEGIAN GULCH.—The Sterling Co., 10 men working, have averaged, so far, $400 a week, and the yield continues undiminished. Messler & Co. have a flume over 1,000 feet long, with a branch over 200 feet, and are making handsome "clean-ups." Clark & Fletcher are encouraged to make preparations for extensive operations. The bar diggings on the cañon are being worked with flattering results.

FRENCH GULCH.—Deer Lodge *New Southwest*, Aug. 20th: The boys had a little excitement on Monday. Allen & Co's success on the west side was the cause, and a stampede was made, resulting in the recording of some 40 claims. The bar is about 30 feet deep, pay gravol all the way. R. B. Campbell is building a 700-inch ditch. Allen & Co. are taking out good pay, using 100 inches of water. The Spanish claims are paying well. Some 50 men are at work on them, but water can only be had about three hours per day.

MOOSE CREEK MINES.—H. S. Stackhouse, of Deer Lodge, in company with Charlie Bennett, returned from Moose Creek mines a few days since. The two principal gulches are the Pioneer and Independence. Each is two miles long. There are a number of side gulches. There is no water except the natural streams, giving Independence a sluice head three or four and Pioneer the same two hours per day. About a dozen claims are paying. Scott & Miller's yields four ozs. per day on two hours' water, two men shoveling, the ground having been stripped. The pay is near the rim-rock, not in the bed of the gulch. Andy Ferguson is working seven men on a ditch from Independence creek, which will be completed September 1st, and the water used in their own hydraulic, on ground now paying an ounce per day.

Nevada.

COPE DISTRICT.

LATEST.—Elko *Independent*, Aug. 28th: Good news comes in from Cope faster than we can record it. Yesterday Mr. Enright brought into our office samples of ore that required no expert to see the rich mineral all through it. Dr. Hudson also showed us the result of about three hours' work of himself and friend in the placers. There is about $5 worth of as pretty dust as we ever saw—the product of 23 pans of dirt. New discoveries are being made every day.

FOR COPE.—*Enterprise*, 24th: Quite a party of miners will leave here in a day or two for Cope district, where they intend wintering. It is milder in that region than here, and the parties expect to be able to work the surface mines as early as March. It is said that mines have been struck about 60 miles this side of Cope.

FROM COPE.—Silver City *Wave*, Aug. 27: Charley Hauson returned from Cope district day before yesterday, well pleased with the prospects of the place. He is having a house built here, all ready to be set up when it arrives at Mountain City.

Billy Hammond also came in yesterday, bringing some very fine specimens of ore from ledges in Cope district.

HUMBOLDT.

LITTLE GIANT.—We learn from the *National* that Robert McBeth has sold his interest in the Little Giant mine to Mr. Fox for $40,000.

The White Pine *News* of August 24th speaks of this mine as follows: "The mine in the last 14 months paid for the mill which works its ore, paid for roads leading to the mill and the railroad depot, and a net profit besides of $50,500. McBeth has been enabled to see his friends in the East, and has now sold out his one-half interest to his partner, Fox, for $40,000. Fox will make a hundred thousand out of it, and then sell for about another hundred thousand, while McBeth is now going resolutely to work to develop the Buena Vista Series, which he owns, and which he says he will show up, next New Year's Day, the best mine that ever was found."

REESE RIVER.

MINERAL HILL.—*Independent*, Aug. 28th: Charley Barrow dropped in on Thursday from Mineral Hill, and from him we learn some particulars. The ore near the summit of the hill is a fine bromide. There are a great number of ledges located, but Mr. Barrow thinks there are not more than three or four good ones so far discovered. The prospect is that this will be a lively camp in a short time.

REVEILLE DISTRICT.—*Inland Empire*, Aug. 27th: From our friend Dodds, just from Reveille, we have received some beautiful specimens of ore. An average assay from the Chico mine shows $282.71 per ton. According to the laws of Reveille, a man may have 30 days after the location of a claim to record it. The consequence is that no record is made of claims that do not reveal pay ore. Yet between 400 and 500 claims are recorded. About 100 men are in the district, and they tell us to wait and we shall see something.

COL. BUEL.—The *Enterprise* says: Col. E. E. Buel has returned to Austin from London, where he has succeeded in negotiating a large sale of mining property in the southern part of the State.

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

GOOD YIELD.—*Enterprise*, 25th: From a two weeks' run of 127 tons of ore from the Twin mine, Silver City, recently, at the Ione mill, the clean-up yielded $6,000, and about the same time 32 tons of ore from the same mine, worked in arastras near the Franklin mill, on the Carson river, yielded $3,640.

HALE & NORCROSS.—Same, 29th: This mine is yielding about 110 tons of ore per day. The shaft is nearly repaired. Good ore is found on the 175, the 300, and 400-foot levels.

YELLOW JACKET.—There is still 30 feet of mud and debris to get out, and as one tub cannot keep the water out, it is only occasionally that a tub of dirt is raised. This is the reason of the slow progress that has been made in cleaning out the shaft.

OVERMAN.—This mine is yielding about 50 tons of ore per day—ore worth $25 per ton.

IMPERIAL-EMPIRE.—The repairs of the shaft being concluded, drifting southward at 1,080-foot level is resumed. The upper levels continue their regular yield.

BULLION.—No ore as yet, even at the lowest levels, where the mine continues perfectly devoid of water.

GOULD AND CURRY.—The drift eastward from the seventh station is in a little over 30 feet. No quartz yet encountered. The regular yield of 40 tons of $45 ore per day is still kept up.

VIRGINIA CONSOLIDATED.—The new shaft is now down 245 feet, substantially timbered throughout. But little water is encountered, and the rock is not very hard. The dirt, rock and water are hoisted in tubs.

CHOLLAR-POTOSI.—This mine is yielding 200 tons of good milling ore per day, principally from the old Blue Wing stope.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, 28th: Mining affairs have improved somewhat. An increased number of men are at work, and a larger amount of ore has been shipped than for several weeks past. An important development has been made, which gives greater confidence in the depth and permanency of our mines. The Eclipse Consolidated shaft, on Chloride Flat, has opened up a body of high-grade ore, 12 feet in thickness, and lying nearly horizontal, at a depth of 112 feet from the surface. The litigation which has for a long time kept the Earl mine idle has at last been terminated by the Aurora Consolidated purchasing the Earl title. Aurora has already begun active operations by the shipment of large quantities of rich ore that had accumulated on the dump. The shipments of bullion since our last review amount to $73,571.70. Considerable shipments of lead bullion from our smelting works have been made recently, but we have no means of knowing the amount of silver contained, and no account is made of them in our reports.

MINING ITEMS.—*News*, 23d: It is said that the furnaces at Swansea are shipping about two tons of lead bullion per day, and that the quantity will soon be doubled. ....We hear of a rich strike in Keystone Ravine, several hundred feet below the Eberhardt mine, in a shaft 125 feet deep. Some of the ore is said to assay as high as $5,000 per ton....Work was started up yesterday on the Ora Dell by ex-Marshal Jackson, who is one of the present owners. The shaft is about 50 feet in depth. The body of pay ore is only 12 feet from the surface....The Eclipse Consolidated mine, on the north side of Chloride Flat, is now taking out high-grade ore, at a depth of 112 feet, from a deposit or horizontal stratum of ore 12 feet in thickness and resting upon a limestone foot-wall. This development is regarded as the most important that has yet been made in the district, proving as it does that our mines are not all on the surface, as many have supposed. It proves that when the upper horizontal stratum of ore is exhausted, there is almost a certainty of finding another one below by sinking, and strong probability that still further down will be found other strata....26th: Two men are at work at the Emersley mine, on the eastern slope of Treasure Hill, below the Hidden Treasure, assorting ore and getting the mine in shape to deliver to the new owners....The North Iceberg mine is taking out some very rich rock. A specimen, weighing 40 pounds, and worth several hundred dollars per ton, was presented to the Cincinnati party now here....28th: Work has been resumed in good earnest on the Parris mine, in the vicinity of the Poeotillo. Capt. Bilty, the principal owner, returned from below with ample funds. He is working double shifts on both the incline and the drift. The incline is down 37 feet, and presents a fine body of ore....*Empire*, 25th: Dave Buel is buying up Spring Valley ores to ship to Austin for reduction. ....A sale of the New York mine to Eastern capitalists is pending....26th: Uncle Joe Trench has gone to San Francisco for a 20-stamp mill, to be put up at once at his mine. He will also bring up the machinery for extensive smelting works.

EBERHARDT.—*News*, 26th: The Eberhardt mine is not, for some reason best known to the owners, contributing one-half that which it might, to the bullion shipment from here. A system of prospecting goes on, probably to open galleries for larger forces of men, and a large share of the labor now performed is what is technically known as "dead work;" but while opening up the mine *some* ore must come; and, to show the yield of this incidental product, we quote an item furnished by Mr. Mitchell, yesterday, from the Oasis mill. The yield for the past eight days has been about $30,000. Mr. Mitchell's figures are as follows:

August 17	$7,569.89
" 20	6,847.34
" 21	6,889.60
" 25	7,084.08

SPRING VALLEY DISTRICT.—*Empire*, John R. Berry just returned from this district yesterday, and placed on our table some very fine specimens of ore, showing well in sulphate and bromide of silver. He gives a very flattering account of the prospects, and reports about 50 men there. About 30 claims have been located. The average of six assays from an equal number of ledges, was $1,083.40. Seven tons of ore from the Reeves & Berry, worked at the Manhattan mill, Austin, yielded a little over $150 per ton. Small lots have been worked from other claims, the yield being as high as $300 per ton.

SMELTING WORKS.—*News*, 26th: The furnace of Jordan & Pritchard's smelting works at Swansea, was so much injured by the recent fire which destroyed the framework, as to require it to be rebuilt. This will delay the resumption of their smelting operations a few days.

SIX TONS OF BULLION.—Elko *Independent*, 25th: One hundred bars of bullion from the Swansea furnaces at White Pine, were unloaded at the depot yesterday, to be shipped to San Francisco by the railroad. This bullion is estimated to contain a large per cent. of silver.

New Mexico.

MORENO.—A St. Louis telegram August 26th is as follows: Gulch mining is reported as a failure in the gulches leading into Moreno Valley and depending on Red river. Water is entirely insufficient, causing great disappointment. Many miners are leaving for Colorado, Arizona, and other points. Willow Gulch, being self-independent for water, is an exception, and is yielding largely. Several new and rich discoveries were made recently in that vicinity, and a new 30-stamp mill is being erected.

Division of Labor is Progress.

"Some persons think the mechanics of the present day have, on account of the great subdivision of labor, deteriorated. This is erroneous. It is true that formerly there were but few mechanical branches, and that a boss in any one branch had to display a considerable knowledge of details not now used in the same manner. A gunsmith formerly had to learn the whole construction of the arm. He was required to make all parts himself and join them together in good style. The increased demand for such articles, and for all other mechanical productions, has necessitated a subdivision of such labor; as it would involve unnecessary loss of time and capital to employ the men in the same manner as formerly. Now there is one man, perhaps, solely employed to forge the springs; another attends to the screws; still another to the stock and woodwork, and so forth; and each one has to display as much skill, perhaps more, than would formerly have been required. Universality of knowledge in practical, as well as in theoretical matters, is, in fact, not of so much consequence as thoroughness in what we do. Human life is short and our capacities limited. It would be folly for one man to attempt to learn everything that science and experience has brought to light. It is far more reasonable and landable to aim at perfection as far as practicable in everything that we do."—*Workshop.*

THE GREAT WASTE OF GAS.—In both London and New York complaints regarding the quality of gas furnished to consumers has led to examination of the subject, and the appointment of referees for its settlement. The report of these referees shows, among other things, that the light given by gas depends in a great measure upon the shape of the burner. Those of the "fish-tail" sort are wasteful. Yet with cannel gas, they give better results than the argands. The kind of gas should therefore be considered; and the form of burner adapted thereto. One kind of bat's-wing burner gives an illuminating power of 99, —while the best fish-tail with the same gas gives only 89. The result is an enormous waste of gas,—because this description of burner is most commonly in use.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

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San Francisco:
Saturday Morning, Sept. 4, 1869.

Notices to Correspondents.

First Street.—The composition of steel still remains a debateable question with chemical metallurgists; the well known French *savan*, Frémy, contending that nitrogen must necessarily be present in order to convert iron into steel. The molecular condition of the carbon possibly is the most influential; for instance, if a piece of soft steel be divided into two portions and one of them hardened or high tempered, it will be found on treating the two pieces with dilute acetic acid that the piece of soft steel will ho scarcely affected, whilst hard steel hecomes rapidly dissolved. Further, soft steel, when dissolved, leaves a homogeneous gray carhuret of iron, whilst tempered steel leaves a black residuum, possessing no cohesion, and having the appearance of pure carbon.

High Pressure and High Temperature. Although water under sufficient pressure will retain its liquid state at temperatures above 212°, the experiments of Coignard de la Tour have shown that if the temperature be raised sufficiently high the liquid cohesion of water will ultimately disappear, and the water be found to pass immediately, without alteration of volume, into the gaseous form, possessing enormous tension. It is estimated by experimenters in this branch of physics that a complete change takes place from the liquid to the gaseous condition when water hecomes heated to redness.

B. Z., Napa.—Other liquids beside water, it is suspected, are occasionally to be found in mineral crystals. In one case related by the late Sir D. Brewster in Vol. 9 of the Edinburgh *Phil. Journal*, the case of an amethyst is described iu which a cavity existed which was three-fourths filled with liquid at the ordinary atmospheric temperature, but became completely filled when the temperaturo was raised to 83° F.; bnt, on cooliug, the vacuity re-appeared, with signs of ebulition.

Screen Making.—There are great numbers of metal screens used on this coast, nearly all of which are manufactured in San Francisco. J. W. Quick, at No. 203 Fremont street, has long made it his especial husiuess to prosecute this branch of manufacture, and is turning out a superior article, giving satisfaction to a large list of customers. His works are sold from Mexico to Alaska. Quartz and flouring mills are his hest customers.

The Diamond Region, iu Brazil, from whence the larger portion of the diamonds in the world have been derived, is a large valley, surrounded hy deep and lofty mountains, and called the Valley of Fire. It is forty-four miles loug hy twenty-two in width, and is the property of the government.

An Ancient Silver Mine—Singular Phenomena.

In the neighborhood of Goginau, in Wales, there is an ancient tumulus of silver mine waste, about sixty feet in diameter by thirty feet in height, which, from quite unmistakable evidences must be at least something over two thousand years old. At all events it was in existence, as is graphically expressed by the correspondent hereinafter alluded to, a long time before Julius Cæsar poked his Roman nose into the British Isles. Some thirty years ago a gentleman visited the spot, aud gave it and the mine from which it was extracted, quite a thorough examination. Extensive workings had evidently been carried on at the mine by the Romans, who must have had possession of it for a long time. There were also evidences of later workings, which, from their character could not have been of an earlier date than the time of Queen Elizabeth.

These explorations led to a reöpening of the mine, which has since become a very valuable property. The ancient miners, as many others have since done, had drifted to within a few feet of a very valuable deposit of ore before abandoning their work. The ore from this deposit has since yielded as high as 7,000 ounces of silver per month. In the more recent explorations of the mine an ancient Roman drift has been discovered, evidently an adit level, the onter opening of which has not been found. This level must have been at least 900 feet long, and yet it was only three feet high and eighteen inches wide! The wonder is how men could run such a distance in so narrow and shallow an opening. Its existence affords a striking example of the economy employed in the use of labor, iu those early days.

One of the most remarkahle discoveries connected with this ancient mine is described by a late correspondeut of the Londou *Mining Journal*, and the same person, ahove referred to, who visited the mine some thirty years ago. We extract as follows:

The most interestiug natural phenomena I noticed were that when we came to re-wash the old slimes, I cannot say whether of the Romau or the Elizabethan period, we found in the comminuted rock or dried slime all the particles had arranged themselves, so that without touching them it was impossihle to tell whether they were the hard lode-stone as it was taken from the vein, or whether it had undergone any change; but iu taking it in the hand it conld he moulded like a piece of putty, and what was still stranger, when these apparent stones were broken to show a transverse fracture there were fine veins of silver-lead ore, like threads of silk, in them, and, to the best of my knowledge, these were arranged exactly as in the parent vein from which they were taken—5° south of east.

It thus appears that since that heap of comminated ore had been placed there by the ancient Roman miners, a decomposition and re-arrangement had taken place among the constituents of the mass. Some portion, at least, of the ore,— argentiferons galena,—had been aggregated by electrical or some other influences, from its mixed condition, as thrown out, into regularly arranged veins of ore, exactly as they had existed in the parent vein. We have witnessed similar phenomena in the "ancient river drift" in the vicinity of You Bet, Nevada county. We have seen where small boulders and pebbles had been thrown out from shallow shafts, from depths where the mass had heen alternately exposed to the influence of air and water, uuder such conditions as to canse a softening of many of the (slate) boulders, that some of the houlders aud pebhles had been intersected hy narrow seams of sulphuret of irou—these seams having been carried, iu perfectly straight lines, through both the pebbles and accompauying cement—just as seams of quartz are fouud cutting the pebbles in the "pudding stone" in the vicinity of Boston, Mass. Such phenomena are interesting in their hearing upou the various theories of vein formation.

The Northern District Fair.

The Northern District Fair, which closed its exhibition on Saturday last, is pronounced by the Marysville *Appeal* as a success in its principal features. The show of blooded horses, breeders, etc., was the best ever seen in the State, and was the *ne plus ultra* of the exhibition. The display of horned stock, sheep, etc., was good so far as quality and blood were concerned; but it is said to have been meagre in extent. The mechanical exhibition was flattering; the show of fruit could not be excelled in the State. The same complaint is made of this that is generally brought against the State Fair, viz: that much of the money which ought to be paid out in premiums on agricultural articles aud productions is squandered in horse-race purses. It is to be regretted that this important feature in the agricultural fairs of this State cannot be held more in abeyance. The difficulty probably arises from the fact that a larger portion of visitors at fairs go to see the "sports," rather thau for information and benefit to others. We fully agree with the *Appeal* that it is evident that two policies must he adopted to make our fairs more attractive as well as useful. The managers must work with a greater capital, and offer larger and more general premiums; and if we have races at all, have the best. Citizens mnst take greater and more active interest in the management. As the matter now goes, the few do the work and the many do the growling. More of the former and less of the lattor will make our fairs popular and successful.

New York Society of Practical Engineering.

The above named organization held its first annual meeting for the transaction of business aud the election of officers on the 18th ult. James A. Whitney, one of the editors of the *American Artisan*, was elected President, and Lawrence Holmes, Corresponding Secretary. The Trustees of the Cooper Institute having offered the Society the free use of one of its large rooms, a resolutiou was offered and adopted inviting both graduates and students of the Cooper Union to participate in the meetings; also one providing that the graduates be privileged for admission to membership without the payment of an admission fee. A resolution was also carried by acclamation, extending an invitation to the Presideut of Columbia College and tho faculty and students of the School of Mines to he present and assist in the discussions, etc., of the stated meetings.

The next regular session of the Society will he held on the 16th inst., when the subject for tho eveniug will be, "The Uses and Construction of Water Meters." A carefully prepared paper will he read on that subject, after which a general discussion upon the subject will be invited, and an opportunity offered for the presentation and comparison of the most noted instruments of that description in use. Any inventor or manufacturer of water meters will be allowed, after the reading of the regular paper, to exhihit and explaiu his improvemeut, provided that he have either a working model or full-sized apparatus to illustrate his remarks.

The meetings of this Society are conducted much after the manner of the meetings of the Polytechnic Association connected with the Mechanics' Institute of this city.

Building in Boston.—It is thought that the enormous amount of twenty millions of dollars will he expended in Boston, for huilding purposes aud city improvevents, during the coming year.

Mechanics' Institute and Polytechnic.

The regular quarterly meeting of the Mechanics' Institute was held at the rooms on Post Street, on Thursday evening, at which the President, Mr. Hallidie, made a quarterly report, presenting a very favorable condition of the finances of the Institute, of the improvements which are in progress, and of the general prospects of the Association.

With regard to the approaching Exhibition, everything looks especially encouraging. Every available foot of space has been applied for; and new applications are constantly coming in, not only from the States and Territories of the Pacific Coast, but from the far East and South. The opening address will be delivered by Irvin M. Scott, Esq., of the firm of Booth & Co., and a member of the Institute.

The Polytechnic Association.

After the President had concluded his remarks, Professor LeConte, of the University of California, was introduced, and delivered a very able and interesting lenture on "The Mechanical Principles which Render Perpetual Motion Impossible." The Professor alluded to the fact that the discovery of perpetual motion has ever been a favorite idea with many ingenious though ill-instructed mechanics. Money enough is expended every few years in this vain pursuit to found and endow a college, which, by the teaching of natural laws, would establish, to the satisfaction of any educated mind, the absolute impossibility of any such result. He proved the impossibility of a perpetnal motion machine, hy reference to the doctrine of the "conservation of force," which establishes the fact that the amount of force in the universe is constant, and that no force is either annihilated or created; heing merely changed in form. That portion of it which in a machine is, owing to friction, converted into heat, is lost, as motive power; and consequently the machine must stop, unless the supply of power is kept up by external means. The same thing was proved also by algebraic reasoning; tho demonstration being aided hy the use of the hlack-board.

The lecture-room was well filled, quite a number of ladies being present. The thanks of the Institute were unanimously extended to the Professor for his very interesting and instructive lecture.

Important Sale Consummated.—It is said that the sale of the Visitacion Rancho, to a party of Eastern capitalists, has been fully consummated. The sum paid is one million dollars; numher of acres in the tract, 3,774. The land borders upon the Bay, and is situated to the south of the city, just over the line in San Mateo County, and some four or five miles from tho preseut center of business. It is stated that the company intend to expend an amount equal to the purchase money in improvements—of what nature we are not informed. The tract has an excellent water front, toward which the growth of the city is constantly tending, and might he made an excellent manufacturing locality.

Another Sale.—A large company from Ackron, Ohio, have purchased tho Feliz Ranch, near by the Visitacion Ranch, for $150,000. The company is organized iuto an emigration colony, and will soon remove to their purchase. A portion of the colony will engage in the mannfacture of pottery, for which excellent facilities are found on the ranch.

A Mammoth Gold Fish.—They have a gold fish in Oakland, which is said to measure fourteen inches from the tip of its nose to the end of its tail. This piscatorial curiosity would form quite a feature in the fountain at the Mechanics' Pavilion, during the coming Fair, if some one would secure possession of it for that purpose.

Immigration.

The reduced rate of travel recently extended to immigrants over the Pacific Railroad, bids fair to prove a success for the road and a great benefit to the State. The arrivals are about fifty per day, or at the rate of over 1,200 per month—mostly from the extreme western States. Very few of the immigrants so arriving would ever find their way hither *via* the Isthmus; so that we may consider those thus arriving as a net gain to the labor population of the State, above those who would reach here by water. This class of immigrants, moreover, coming from the great farming regions of the West, are such as would naturally seek the inviting fields presented in our great inland valleys. It is the very class of labor that is most needed to develop our agricultural wealth.

There is now a movement from various directions, east and west, looking to combined action or colonial immigration—co-operative associations of men and families with small means, to buy large tracts of ands, and either parcel them out to individuals or occupy them together, and embark in the dairy, wool-growing, cattle raising, fruit, wine or silk-growing business. Many such colonies will find their way to the State within the next three, four or five years. The genial climate, variety of resources, and great productiveness of soil in California, surpass similar advantages in any other part of the earth, and are fast becoming known in every portion of the world. The increased facilities and low rates of travel now enjoyed will greatly facilitate such movements.

The Pacific Mail Company will hereafter have but two rates of travel—$100 in the cabin, and $50 in the steerage. These prices will command large passenger lists from New York, and even from Europe *via* New York. We have also a rumor of an opposition line of steamers, which must still further stimulate immigration. The managers of the Central Pacific deserve credit for the wisdom and liberality which they have displayed, both in reducing their first class rates and in putting on emigrant cars at the very low price of $50. These cars, we are assured, are fitted up in a very comfortable manner—nearly as much so as the ordinary first class cars; the only difference being in the slow time necessarily made by their going with freight trains. Time, however, is not of special importance with those who will travel in these cars. By reason of all these various facilities, we may reasonably look for a continuous and very large increase of population during the two or three coming years. The predicted results of the railroad are being realized as fast as the necessary steps can be taken to accommodate ourselves to the change thereby introduced into our commercial and social relations with the rest of the world.

Death of A. J. Grayson.—We hear of the death on August 17th, at Mazatlan, of a California pioneer of 1845,—A. J. Grayson. He was at one time a prosperous merchant, but met with heavy losses, and finally devoted himself to the study of natural history, for which he had unusual talent. He excelled in the painting of birds, and, a second Audubon, occupied himself for several years in making a large ornithological collection. Frequenters of the art gallery at the Mercantile Library, will remember a picture of a stalwart hunter leaning on his rifle and gazing from the summit of the Sierra upon the Sacramento Valley. That is a portrait of Grayson.

The Mineral Hill Rush—Telegraphic. A dispatch dated Carlin, September 1st, says: Large numbers are leaving daily for the new El Dorado. One ton of rock, worked by mill process, yielded $900. It is reported that the Austin Company, the original locators, were offered $400,000 for their entire interest in the district.

The Isthmus Canal.—It is now said the negotiations have been concluded, and only await the forms of a legal completion, for the construction of a ship canal across the Isthmus of Nicaragua. The constructing parties are a company of French capitalists and the governments of Nicaragua and Costa Rica, which jointly control the lower portion of the San Juan river, through which the canal must reach the sea. It thus appears that the pig-headedness of the Columbians of Panama has lost to them forever the possession of one of the most important engineering enterprises ever conceived, and one which would have poured hundreds of millions of wealth into their territory. While they have been higgling with the United States Commissioners, and beating the bush for naught, their more enterprising and far-seeing neighbors have caught the bird. A canal from the Atlantic to the Pacific, at or near Panama, is a commercial necessity; and if the above reports are correct, the United States and Panama have lost the opportunity of constructing and controlling such a work.

New Patent Harrow.—T. A. & T. S. Brown, of Brooklyn, Cal., have just received a patent for an improved harrow. The device relates to an improved link connection, to be used where two harrows are united together, and it consists in employing in place of the usual hinge a link which is attached to one of the harrows; and a bar, having an enlarged head, is attached to the opposite one. This head is passed into the link, and serves to connect the two together, so that each of the harrows will have an independent motion back and forth on the ground equal to the length of the arm, and also an independent movement up and down equal to the length of the loop or link, thus greatly facilitating the harrowing of the ground by allowing each harrow to accommodate itself to the conformation or unevenness of the field, and insuring a thorough pulverization of the soil.

The Sierra Nugget.—The Downieville *Messenger* criticises an item upon large nuggets in the *Times*, and says of the one recently found in the Monumental Quartz Co'a claims—"It weighed 106 pounds avoirdupois, or 141 pounds 4 ounces troy, and stands fourth on the list of big chunks, to wit: 1st, the "Welcome Nugget, 168 pounds; 2d, the largest ever found in this State, 160 pounds; 3d, the Blanch Barkly nugget, 146 pounds; 4th, the Sierra County nugget, 141 pounds 4 ounces."

The same journal says: "As near as we can learn, about 100 pounds of gold have been taken out since the day on which the $50,000 was obtained, and the report is that there is a much larger nugget in the mine, and that the owners are taking measures to get it out without breaking."

We learn that the nugget will be on exhibition at Woodward's Gardens in this city on and after to-morrow, the 5th inst., daily, between the hours of 11 A. M. and 3 P. M.

Miss Anna Dickinson.—The lecture by this lady on the evening of the 2d inst. for the benefit of the Mercantile Library was a success. She lectures this evening at Platt's Hall, to-morrow evening at the Metropolitan Theater, and on Tuesday evening at Platt's Hall again. The subjects for these three farewell lectures are respectively "De Profundis", "A Lay Sermon", and "A Last Word".

Miss Dickinson has remarkably acute powers of observation, and has made good use of them during her visits to Yosemite and other places of note, and to various mines, manufactories, etc., in California. She will spend a day at the State Fair in Sacramento, and leave for the East some time during the coming week.

Familiar Science.

How to Treat and Use Rancid Butter.

Butter is a mixture of several kinds of fats. Fats are composed of glycerine, with acid, one of which is known as butyrine,—a fat consisting of glycerine and butyric acid, a very powerful caustic and pungent acid, having that peculiarly unpleasant odor which characterizes rancid butter. Butyric fat constitutes but a very small portion of the mass of any given quantity of butter; but within that portion is contained the principle from which its chief rancidity is derived. Butyrine, as such, is neutral or sweet; but when it is decomposed,—when its combined acid is separated from its glycerine,—the acid principle contaminates the whole mass of butter. This decomposition is more or less accelerated by the quality of the butter, or the greater or less care which is taken in its manufacture and preservation. All fats grow stale and more or less unpleasant to the taste and smell, with age, on free exposure to the atmosphere; but no one more readily than butyrine.

The decomposition of this compound is always the first step in the decay of butter, and when once set free, in any considerable quantity, it is impossible to remove it, except by evaporation; although a small portion may be removed by washing or "working" the butter in water or milk. To accomplish its entire removal, the butter must be heated to about 315° Fahrenheit, and kept at that temperature long enough for the evaporation of the acid,—five, ten or twenty minutes, according to the quantity operated on; but this process renders the butter unfit for table use, although it may still be employed for cooking purposes. If rancid butter is mixed in cake, a portion of the butyric acid will be absorbed by the water, and thereby partially neutralized, another portion will be evaporated; but the heat is not sufficient to make the evaporation perfect. If it is used for frying in an open pan, it will be pretty certain to lose all its butyric acid.

With this knowledge of the chemistry of one of its most essential components, the prudent housewife will be able to so purify rancid butter that she may make the fullest use of it without conveying any of its offensive properties to the articles of food into which it may enter in the process of cooking.

A Substitute for Food.—M. Rossi writes to the *Roman Scientifica* that by the use of a decoction of the *erythroxylon coca*, a plant which grows in Peru, men may retain their health and strength for several days without taking food. He himself had tried it, and felt neither hunger nor thirst for forty-eight hours after drinking freely of a tea made from the leaves of this remarkable plant.

Dew and Frost.—All bodies are constantly radiating heat, and if an equal amount is not returned from some source, they grow colder. Hence in a *clear* night the ground grows colder by radiating its heat freely into the atmosphere, where it is lost in space. When this proceeds to a certain extent, dew is formed, and if the air is sufficiently cold, the dew freezes into frost.

When the sky is cloudy the clouds either prevent the radiation, or reflect back a portion of the escaping heat. Hence a thermometer, in a close room, may mark the same temperature on a clear and a cloudy night; and yet a severe frost may accompany the former, while the latter is perfectly free from any such appearance. The clouds form a covering or blanket as it were, for the ground, and keep it warm precisely as a blanket keeps the reader warm when spread over him on a cold night. A very thin covering, by intercepting the radiated heat, will often prevent injury to tender plants. Even a sheet of the thinnest muslin, stretched over a tree in bloom, or plants, affords perfect protection from frost, when other trees or vegetables, uncovered, may be either seriously injured or entirely destroyed.

Green and Dry Wood for Fuel.

Few are aware of the great loss of heat sustained in the use of green wood for fuel. Green wood will lose, in being properly seasoned, about one-third its weight in water; or fully 150 gallons of water. Now all the water in every particle of wood must be evaporated before it will burn, and to evaporate that water, wood must be used which has already parted with its water. Hence in burning a cord of green wood we must subtract from its total heating power enough to evaporate 150 gallons—nearly four barrels—of water. That amount is absolutely thrown away, so far as any practical use can be made of the heat evolved by it. The evaporation of 150 gallons of water is equivalent to raising 750 gallons to the boiling point.

The heat, however, so employed, is more economically used than it could be in any of the contrivances for evaporating or boiling water, so that for this and other reasons, which might be named, the real loss of heat in burning green wood is liable to be overrated; yet careful estimates and actual experience show that seven cords of well-seasoned wood will go as far and throw out as much heat, for practical purposes, as eight cords of green. Of course, this estimate applies only to the extremes of green and dry; as the actual results will vary exceedingly with wood of different degrees of seasoning and different varieties of growth. The more porous the wood, the greater the necessity for thorough seasoning.

Seasoned wood will sometimes burn with such great rapidity that the heat which it gives out cannot be readily controlled, and much of it is necessarily wasted. Under such circumstances green wood or a mixture of green and dry may be advantageously employed. Where the draught can be properly regulated, however, as in an air-tight stove, seasoned wood should always be preferred for either convenience, comfort or economy. Moreover, when wood is drawn from a distance, it is well to consider that with every cord of green wood half a ton of water must also be hauled.

The Citron and Citron Melon.—The citron, as imported in small boxes, is the rind of a large, thick-skinned, lemon-like fruit, which is preserved in sugar and dried. The flavor which it has is not imparted to it, but is natural to the fruit. The citron melon, grown in our gardens and put up for preserves, is a very different fruit. The thick, fleshy portion between the rind and seeds, is put up and preserved in syrup, to which ginger or other flavoring material has been added. A beautiful green color is imparted to it by soaking it for a short time in weak alum water. This fruit is merely used as a sponge to soak up the syrup and form a convenient vehicle for carrying the same to the stomach. Unlike the imported citron it has no flavor of its own, which it is desirable to preserve.

How to Save a Drowning Person.—It is of frequent occurrence among those who attempt to save others from drowning, to fall victims to the engulfing waters themselves. This is owing to the fact that they do not pursue the proper course in their efforts to save those in a drowning condition. It is not generally known that when a person is thus situated, if he is taken by the arms from behind, between the elbows and the shoulders, he cannot touch the person attempting to rescue him, and whatever struggle he may make will only assist the person holding him in keeping his head above water for an hour. If seized anywhere else, the probability is that he will clutch the swimmer, and, as is often the case, both will be drowned.

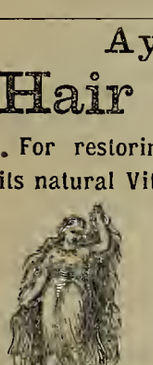
THE "FELTED" PAPER.—M. Pavy has patented a new and peculiar paper of extraordinary pliancy and strength. It can be sewn together like cloth. The *Mechanics' Magazine* says of it: "The uses to which this paper can be put are innumerable. We may mention a few of the articles we have seen. First, petticoats, which no girl of the period could resist. These may be printed exactly like the skirts now so fashionable, or they may be white, and have openwork stamped on in patterns, which scarcely any amount of labor with scissors and needle could imitate. The marvel is that they can be sold retail for sixpence each—little more than the cost of washing a petticoat. We have next bed furniture, of imitation cretonnes and chintzes. These are printed with patterns of great beauty, and a set of curtains will only cost five shillings. We have also quilts, which, besides being non-conductors of heat have a very genteel appearance. White day-covers for beds are made with embossed patterns and equally cheap. White table-cloths, stamped with patterns in remarkably good taste will, we are sure, soon ornament many a dinner table, and serve to light the fires the day after the party.

GEO. E. ROGERS,
(Successor to O. W. Bell.)
ASSAYER,
512 California st., San Francisco.
J. A. MARS, Assayer.
Ores carefully Assayed. Gold and Silver Ores worked.
23v16-qr10pnr

CALIFORNIA
BUSINESS UNIVERSITY
204 Montgomery Street.
Full particulars regarding our Practical Course of Studie may be had by calling at the University, or by addressing
17v17-qy12p E. F. HEALD, San Francisco.

REMOVED.
The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. 118, 120 and 122 FRONT STREET, one door from southeast corner of California street.
July 1, 1869. ELAM & HOWES.
4v19-3m

Ayer's
Hair Vigor,
For restoring Gray Hair to its natural Vitality and Color.



A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

HAIR DRESSING,

nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.

Prepared by Dr. J. C. Ayer & Co.,
PRACTICAL AND ANALYTICAL CHEMISTS,
LOWELL, MASS.
PRICE $1.00.
Sold by all druggists and dealers in medicine every where. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18cow4m

Business Cards.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
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CARD PICTURES,
ONE DOLLAR PER DOZEN,
And Photographs, Ambrotypes and Sun Pearls, by first class artists, at the lowest rates,
At SILVA'S, 64 Third Street,
Northwest corner of Mission. - - - - - San Francisco.
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NATHANIEL GRAY. H. M. GRAY.
N. GRAY & CO.,
UNDERTAKERS,
641 Sacramento St., cor. Webb, San Francisco.
☞Sole Agents for Barstow's Metallic Burial Cases and Caskets. 25v14tf

Farmers and Mechanics
BANK OF SAVINGS,
No. 225 Sansome Street.
Interest paid on Deposits. Money Loaned on Real Estate.
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BUCKELEW & CO.,
Importers and Jobbers of
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W. T. ATWOOD,
PURCHASER OF
COPPER ORES, BARS, MATT Etc., Etc.,
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The highest market price paid for ores assaying 10 per cent. and upwards 23v17qr

D. C. HALL & CO.,
WHOLESALE AND RETAIL
Ale, Porter, Wine and Liquor Merchants,
912 Market street, San Francisco.
☞City and country orders promptly attended to. Merchants, Shippers and Families supplied in large or small quantities. 3v19 3m

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C. H. WAKELEE & CO.,
601 California street, S. W. Corner Kearny street, buy and sell Farms and City Real Estate. Parties wishing to Invest will find it to their interest to call on the . 13v18-3m

Mining Property for Sale.
A Two Thirds Interest
OF THE
Golden Rule Mining Company's
Claims and Mill,

Situated in Tuolumne County, California, two and a half miles south of Jamestown, on the Great Mother Quartz Lode. A good 15-stamp Water Power Quartz Mill is situated on the property, with a never-failing supply of water, as can be shown by the last four years continual running. This Claim has three parallel Ledges, from 50 to 100 feet apart, averaging from two to six feet in width, with a length of six hundred feet. They are so situated that a tunnel has been run through them at right angles, making a surface drainage of from seventy to eighty feet in depth on the mine. The mine is well ventilated by shafts from the surface, and well timbered so far as worked. In the mine are steam Hoisting Works, capable of hoisting from a depth of 300 feet. A force of thirteen men only are required to keep both mill and mine running regularly.

On the surface and flats for a distance of 500 feet from these veins, the ground or surface was mined by placer miners, in former years, producing from two to five ounces per day to the man, during the season when water could be obtained, which fact goes to prove that a heavy deposit of ore was once contained in the croppings of these shutes, which, by all former and present theories of deep mine workings, came from below, indicating that when sunk upon to a proper depth, the lead will develop a mine equal to the Amador or Eureka.

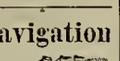
This claim has paid its 19th regular dividend of $1,500 each, during the past four years, besides all the construction and other expense account, and has levied no assessments during the same time, and at present has on hand $8,000 in the Treasury, and no debts.

The last level, 150 feet from the surface rock, averaged $7 per ton, on which was a profit of from $4 to $4 50 per ton. The length of the two shutes of ore on the east vein, and the only one worked upon, has been about 200 feet.

Now I propose to sell two thirds of this valuable property for $16,000, cash; and any party who desires to purchase a property of this kind—which theory has proven that it requires depth, on well known shutes of ore, for a sure fortune—can obtain a chance here, providing he or they will go down a sufficient depth. No purchaser is solicited unless he first goes and examine the mine, or sends a mining engineer in whom he can have confidence, to indorse what he may think proper of what has been here stated.

For any further particulars, direct by letter to Wm Bosworth, San Francisco, P. O. Box 1978, or at my office, room No. 5, over Donohoe & Kelly's Bank.
22v18tfqr WM. BOSWORTH.

California Steam Navigation

COMPANY.


Steamer CAPITAL.....CAPT. E. A. POOLE
" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE.....
" CORNELIA.....CAPT. W. BROMLEY
" JULIA.....CAPT. E. CONCKLIN.

Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.
13v12 B. M. HARTSHORNE, Prealdent.

Metallurgy.

LEOPOLD KUH,
Assayer and Metallurgical Chemist,
(Formerly of the U. S. B. Mint, S. F.)
Office, No. 611 Commercial Street, opposite the Mint, San Francisco.
BULLION MELTED AND ASSAYED.
The correctness of which is guaranteed in every respect All kinds of Ore and Mineral tested, assayed and analyzed in the most satisfactory manner.
Refers by permission to W. C. Ralston, Cashier Bank of California; Messrs Pioche & Bayerque, Wm. M. Lent, John D. Fry, E. Cahill & Co., A. K. Grim, President Pacific Union Express Co.; John M. Eckfeldt, M. and R. U. S. B. Mint. Hale & Norcross S. M. Co., and the principal mining companies on the Comstock Lode. 25v17-tf

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SMELTING WORKS,
Twelfth street, between Folsom and Howard.
GALVANIZING.
Also, Anti-Friction, Alloys for Journals, Type and Stamping Metals, Tinners and Plumbers' Solder, Etc.
☞The best price given for the most rebellious or refractory ores. Ores and minerals assayed and analyzed.
ISAAC BLUXOME, Agent,
4v18 3m N. E. cor. Washington and Battery streets.

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ASSAYER AND WORKER OF ORES,
No. 10 Stevenson street, near First, San Francisco.
Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc, etc. Students instructed in all branches of Metallurgy, on liberal terms.
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(Having had 33 years' experience in Europe and America,) supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

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Dentist,
No. 205 Third street, up stairs, San Francisco
Teeth filled with fine gold, artificial bone, and platina.
All Plate Work made and repaired of the best material, at the shortest notice, and warranted.
None cheaper and better on this coast—call and examine specimens
North Beach and South Park cars pass the door.
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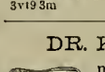
HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
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GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorf streets,
27v16 SAN FRANCISCO.

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Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

To Quartz Mining Companies.

To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—

One Steam Engine, 60 horse power, made by Burden, Brooklyn, New York.
Two large Boilers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift-Pump, 6 inches, of superior make and finish.
280 feet of 5 inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.

The Company having ceased operations intend selling off their effects as speedily as possible.

For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or E. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

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WM. BARTLING. HENRY KIMBALL.
BARTLING & KIMBALL,
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J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
S. E. Corner of Mission and Fremont sts.,
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SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
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J. J. JONES,
CARPENTER and BUILDER,
No. 324 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
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W. C. CAMPBELL,
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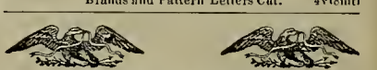
No. 20 Fremont street, over Phœnix Iron Works, San Francisco.
Particular attention given to MODELS for the Patent Office Brands and Pattern Letters Cut. 4v18mtf


J. F. PAGES,
SEAL ENGRAVER,
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Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.
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Pacific Chemical Works.
SULPHURIC ETHER.
SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS,
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.

"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19 6m

HIBBERD, SANBORN & CO.,
STAIR BUILDERS.

South Point Mills, Berry Street,
Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.
6v19-3m

GIVEN AWAY.
To extend their circulation in California, the proprietors of
TILTON'S
JOURNAL OF HORTICULTURE
Will send their Magazine (devoted to Fruit, Flowers and Vegetables)
FREE TO ANY ADDRESS.
Those parties desiring it, with a view to becoming subscribers if they are pleased with it, can address
TILTON'S JOURNAL OF HORTICULTURE,
7v19.3w BOSTON, MASS.

New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the vellous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases wh re a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

OCCIDENTAL

Insurance Company,

OF SAN FRANCISCO.

Cash Capital, - - - - - - $300,000

GOLD COIN.

Office S. W. corner of Montgomery and California streets.

Fire and Marine Insurance.

All Losses paid in U. S. Gold Coin.

CHR. CHRISTIANSEN, President

B ROTHSCHILD, Secretary 20v17-3m

Pump Leather.

The attention of MINING COMPANIES, and others requiring a superior article for Hydraulic purposes, is invited to the heavy Oaked Tanned Pump Leather, manufactured and prepared expressly by the undersigned.

TRADE SANTA CRUZ TANNERY E. JONES & Co MARK.

Constantly on hand and for sale by

GRAY, JONES & CO.,

Depot of the Santa Cruz Tannery,

418 Battery St., San Francisco.

25v17-1y

Office of California Powder Works,

San Francisco, July 15, 1869.

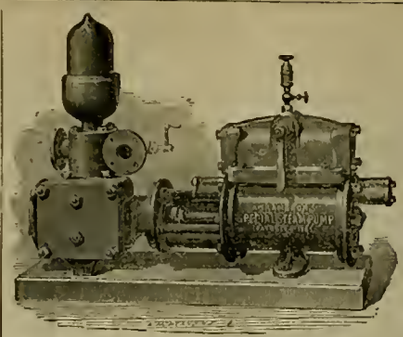
NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

JOHN P. LOHSE, Secretary.

5v19-3m **314 California street**



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PICKERING'S
Engine Regulators.
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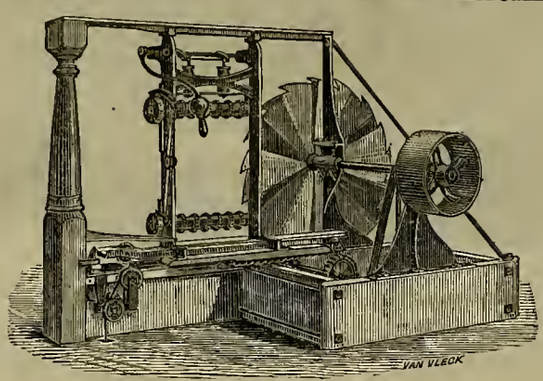
SURFACE
CONDENSERS.

DAVID STODDART,

114 BEALE STREET.

HUNTINGTON'S IMPROVED SHINGLE MACHINES.



SHINGLE MACHINES CONSTANTLY ON HAND.

Steam Engines, Saw Mills, Lath and Picket Machinery, and Flax-Breaks,

MADE TO ORDER.

F. A. HUNTINGTON, Manufacturer,

8v8 1-1smfm **17 and 19 Fremont Street, San Francisco.**

Rails, Newel Posts,

AND BALUSTERS,

Constantly on hand for sale, and shipped, together with all kinds of

STAIR WORK,

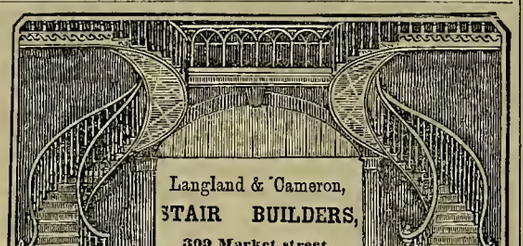
To any part of the coast. Practical workmen sent, when desired, to put up the same.

Work Warranted to Fit

by simply sending a correct ground plan of stairs, together with hight of story.

Wood-Turning and Scroll Sawing of all kinds promptly executed.

☞ Spanish Cedar, Walnut and California Laurel always on hand or sale.



Langland & Cameron,

STAIR BUILDERS,

309 Market street,

And 485 and 487 Brannan street,

SAN FRANCISCO.

16v16-1y

Wonderful Invention!—To Housekeepers!

NEW METHOD OF

WASHING CLOTHES

WITHOUT LABOR.

JOHN REIST'S Celebrated Patent Automatic

CLOTHES WASHER AND BOILER.

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S. Patent Office, November 4, 1868. See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco,

Dealer in Stoves and Tinware,

25v1-3m 67 and 69 Fourth st., bet. Mission and Jessie sts

MEUSSDORFFER,

HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL.

635 and 637 Commercial street.....San Francisco
123 J street.....Sacramento
Cornor of D and Second streets.....Marysville
72 Front street.....Portland, Oregon.

Our wholesale House, 623 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 23v16-3m

The Excelsior Force Pump.

For all Purposes the Best.

ALL PUMPS WARRANTED.

BRITTAN, HOLBROOK & CO.,

AGENTS,

111 and 113 California St.,

SAN FRANCISCO.

9v19-2m

THE GIANT

POWDER COMPANY

Is now prepared to fill all orders for

GIANT POWDER,

Put up in Boxes, either in Bulk or in Car bridges.

General Agents,

BANDMANN, NIELSEN & CO.,

25v16-3m 210 Front street, San Francisco.

International Hotel,

JACKSON STREET

BETWEEN MONTGOMERY AND KEARNY STS.,

SAN FRANCISCO, CAL.

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from $1 50 to $2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

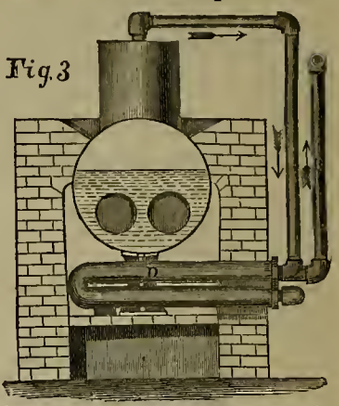
☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for **50** cents

21v12 F. E. WEYGANT, Proprietor.

Important to every one using Steam for any purpose.

CARVALHO'S

Patent Steam Superheater



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1869.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CROCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 55° deg—an increase of 200 deg."

CAREW MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

"Superheater saves at least 25 per cent in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming."

CONTRA COSTA LAUNDRY, Oakland, July, 1868

"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. CO., Cal., August, 1868

"Superheater causes a use of 40 lbs. steam instead of 60 lbs.; use much less water, and there is a saving of fuel." (2 sets.)

SIXTH MECHANICS' INST FAIR, S. F. Sept. 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works better."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.
JOHN L. CONSTABLE, Engineer. 25v18tf

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam tight inside as well as outside, thereby effectually preventing the steam from entering into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

A Long Desired Article

FOR CLEANING THE HEAD AND HAIR. THE CLEANing of the head and hair has been the subject of consideration for a long time. This object will be accomplished by using

CAMILLE CHAMPOO,

which not only does away with the poor soap so offensive to use, and so injurious to the hair, but it cleans the head, strengthens and beautifies the hair, preserves the color and prevents baldness. It is cooling in nature, and can be used with safety and reliance on the smallest infant. Price 50 cents per bottle. Prepared by EMERSON & LUELLING, **723** Mission street, San Francisco, Cal.

HEATHFIELD & BOGLE, Wholesale Druggists, **206** and **208** Battery street, San Francisco, sole Agents for the Pacific Coast. 24v18-3m

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

New Incorporations.

Combination M. Co.—Alpine County. August 30th. Capital stock, $140,000, in 800 shares. Trustees: Dr. Wm. McCormick, Geo. D. McLean and J. K. Byrne.

Meadow Valley M. Co.—White Pine. Aug, 20th. Trustees: S. S. Robinson, H. A. Lyons, L. Maynard, Delos Lake, M. Kelly, E. D. Keyes, J. T. Boyd, C. D. O'Sullivan and F. L. A. Pioche.

Columbia G. & S. M. Co.—Aug. 27th. Capital $400,000, in 4,000 shares. Trustees: Matthew Scott, W. C. Pease, E. P. Fay, C. W. Fingard and E. C. Doran.

California Manganese G. & S. M. Co.—Aug. 28th. Capital $100,000, in 1,000 shares. Trustees: Wm. B. Carr, E. Dyer, and Jenkin Richards.

Lynn Boot and Shoe M. Co.—Aug. 30th.—Capital $100,000, in 2.000 shares. Trustees: J. W. Tripp, P. A. Eakin, E. A. Manning and Jos. Smith.

St. Crispin Coöperative Boot and Shoe M. Co.—Sept. 3d. Trustees: Jas. Davis, Pat. Stokes, Thos. Hopkins, J. Sullivan, John McDonald, Madison Sweetser and Ed. Herrick.

Meetings, Elections, Etc.

Pennsylvania G. & S. M. Co.—Alpine County. Aug. 16th. Trustees: O. W. Gilman, T. Carlson, Ole Anderson, Joseph Larson and Peter Olsen. President, O. W. Gilman; Secretary, J. A. Johnson; Treasurer, E. F. Gibson; Superintendent, Thos. Carlson.

Pacific Rolling Mill Co.—Aug. 30th. Trustees: W. Alford, D. O. Mills, A. Hayward, L. B. Benchley and B. P. Brunner. President, W. Alvord; Vice President, L. B. Benchley; Secretary, S. L. C. Swezey; Superintendent, B. P. Brunner.

Great Loss.—A Philadelphia telegram of September 2d, says: Among the paintings burned in Earl's gallery, last night, was Bierdstadt's celebrated Yosemite Valley.

The Mining and Scientific Press, a most able California journal, has entered upon its nineteenth volume. The Press is now an influential publication, and is valuable to all classes—the miner, the farmer, and the scientific world generally.

It is a large, sixteen-page publication, and the proprietors, with commendable energy, have brought it to the front rank among scientific journals.—*Pajaronian.*

Returned.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photographs, or Enamcled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction. 10v18 6m B. F. Howland.

Co-Operative Union Store.—This is becoming one of the most useful Institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco. 24v18-4w

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Hewilz Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18 3m

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents

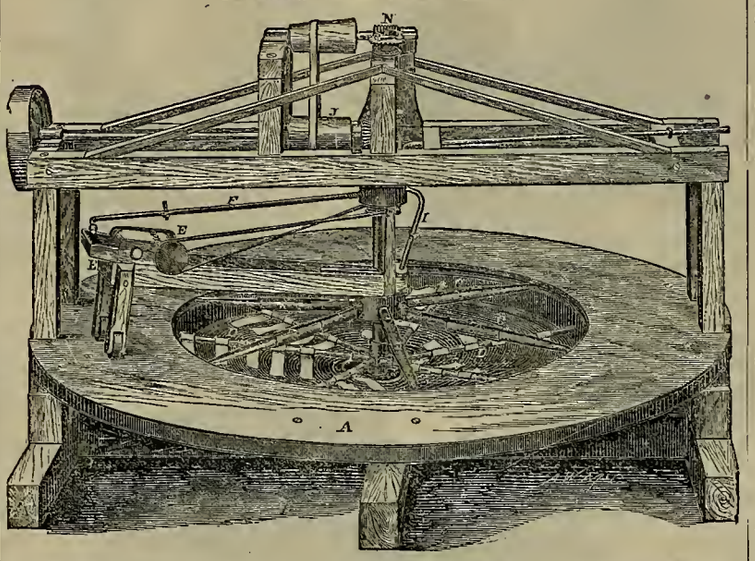
The Fourth Volume of the Mechanics' Fair Daily Press will be printed in the Pavilion, commencing September 14th. It will be distributed free to over **100,000** different persons! affording it a wide and immense circulation.

The Fair Press will contain eight pages, with many illustrations and interesting descriptions of articles on exhibition, amusing incidents of the Fair, and will form a very desirable first-class advertising medium. Advertisers will do well to secure their space early.

DEWEY & CO., Prop's,
Mining and Scientific Press, **414** Clay street.

PAINE & STEPHENS'
IMPROVED CONCENTRATOR,

For Saving Gold and Silver Sulphurets.



One Machine, costing about $1,300, is sufficient to work the Sands from 25 to 30 Stamps,

Less power being required than for any other Machine. The attention of quartz millmen throughout the State is directed to the subjoined certificates, and if they desire they can visit the Amador Mining Co's mill, near Sutter Creek, the Eureka Co's mill at Grass Valley, or the Banner Co's mill near Nevada, and see for themselves.

CERTIFCATES:

Grass Valley, Jan. 4th, 1869.—This is to certify, that we have used the Paine, Stephens & Harry Concentrators for over twelve months. They have given us entire satisfaction, and are the best we ever used. WILLIAM WATT, Supt. Eureka Mine.

This is to certify, that we have had in use for the past 18 months one of Paine, Stephens & Co's Sulphuret Saving Machines, constructed by John T. Harry, (called a buddle,) and which operates satisfactorily, particularly so in saving fine sulphurets, and we recommend it as well worthy of use, even where other Concentrators are used above it, as it will pay if there are any sulphurets. WM. L. TISDALE, Supt. Star Spangled Banner Mine.

Nevada City, Oct. 26, 1868.

Any one wishing to purchase one of these useful machines, can do so by applying to THOS. N. PAINE, at Grass Valley, Nevada County, or JOHN T. HARRY, Sutter Creek, Amador County.

13v16eow

JOHN WRIGHT & CO.,

—DEALERS IN—

PICKS AND PICK HANDLES.

Sole Agents for Washoe Tool Company,

Nos. 13 and 15 Fremont sts., at Nelson & Doble's, San Francisco.

LIST OF PRICES OF PICKS:

No.	1	Round Eye surface,	4	lbs	$16	No.	17	Drifting	4½	lbs	$20
"	2	" "	4½	"	16	"	18	"	5	"	20
"	3	" "	5	"	18	"	19	"	5½	"	22
"	4	" "	5½	"	18	"	20	"	6	"	22
"	5	" "	6	"	20	"	21	Poll	4	"	20
"	6	" "	6½	"	22	"	22	"	4½	"	20
"	7	" "	7	"	24	"	23	"	5	"	20
"	8	Flat Eye surface	4	"	16	"	24	"	5½	"	20
"	9	" "	4½	"	16	"	25	"	6	"	22
"	10	" "	6	"	18	"	26	"	6½	"	24
"	11	" "	6½	"	18	"	27	"	7	"	30
"	12	" "	6	"	20	"	28	Coal	2	"	16
"	13	" "	6½	"	22	"	29	"	2½	"	15
"	14	" "	7	"	24	"	30	"	3	"	16
"	15	Drifting	3½	"	18	"	31	"	3½	"	16
"	16	"	4	"	18						

Also PICK EYES ready for the steel, for the Blacksmiths, which will be sold cheap.

I wish to call special attention to my

NEW ADZE EYE PICK,

Which was made under my own supervision while in New York. For BEAUTY, STRENGTH and DURABILITY, they are unequaled.

JOHN WRIGHT.

We have a large stock of EXTRA NO. 1

WHITE HICKORY DRIFTING PICK HANDLES,

WHICH WE OFFER CHEAP.

CALL AND EXAMINE FOR YOURSELVES.

16v15am 3m

New Advertisements.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.

THOMAS MOONEY, President.
August 2, 1869. 6v19 1m

To Let—Room 18 by 36 feet, second story, 414 Clay street. Rent cheap.

ANNA E. DICKINSON'S
LAST LECTURES
—AT—
PLATT'S HALL.

SATURDAY EVENING, SEPTEMBER 4,

"DE PROFUNDIS."

TUESDAY EVENING, SEPTEMBER 7,

"A LAST WORD."

ADMISSION.....FIFTY CENTS.
RESERVED SEATS.....ONE DOLLAR.

☞ Reserved seats can be secured at the door on the day of the Lectures at Platt's Hall.

Sunday Evening, September 5,

SHE WILL GIVE

"A LAY SERMON"
—AT—
Metropolitan Theater.

ADMISSION,.....FIFTY CENTS.

NO RESERVED SEATS.

SAN FRANCISCO
Pioneer Screen Works.

JOHN W. QUICK,

203 Fremont street, near Howard, San Francisco.

Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

DR H. J. PAINE. ROBERT CULLEN.

PAINE & CO.,
Mine Commission Merchants,

No. 225 BUSH STREET,

SAN FRANCISCO.

Will negotiate the sale of Mines and receive consignments of Ores from Battle Mountain and all parts of the Pacific Coast. They will sell or work the Ores, as the consignors may direct. They guarantee to pay the highest prices for Gold, Silver, Copper, Galena, Lead, Zinc, Antimony and Tin Ores, on the shortest notice. They will make test or working Assays for prospectors at a very low figure. They will also receive orders and furnish Miners' and Farmers' Supplies, including machinery of all kinds, at the lowest prices. N. B.—All correspondence with us will receive prompt attention. 10v19-3m

A NEW
Gold Metal.

THE GOLD METAL WATCHES

Now being introduced by

C. E. COLLINS & CO.,

No. 629 Washington Street,

SAN FRANCISCO,

Surpass anything yet made in the way of an Imitation Gold Watch. They wear well, and keep good time.

The Ladies' Watches cost $10, $15 and $20 each.
The Gentlemen's cost $15 and $20 each.
Chains, from $3 to $6 each.

Can be sent by Express to be paid for on delivery.

C. E. COLLINS & CO.,

No. 629 Washington street, San Francisco.

P. S.—Where six watches of the above are ordered at one time, we will send one extra, free of all charges.

We also deal in the finest Gold and Silver Watches, Watch Materials, etc. Send for circulars or prices. 7v19 4t

Mines, Mills, Capital and Labor.

Almarin B. Paul, one of the most vigorous and thoughtful writers on current topics on the Pacific Coast, furnishes the following to the *Bulletin* of this city. It purports to be a reply to some querries by a White Pine correspondent. We reprint the answers entire.

Capita —What to Do and Where to Get It.

You say "If miners could hit upon some plan of building small and economical mills, they would get along better than to depend upon selling or going in with heavy capitalists, in too many instances to be swindled out of all by expenses and assessments." In that idea you have struck the key note, which if acted upon, will make every mining district prosperous, and give the whole State renowned life.

At this stage of affairs, when capital is so shy and exacting, it does call for some system whereby a few men of smaller means can club together, and, with a few dollars comparatively, put themselves in a position of independence, both against cheap labor and dear capital, by coöperating and working their own mines. I am laboring, and have been for two years, to this end, and so are others; and we all hope to succeed. I am watching with a critical eye every improvement in milling, as appendages to my system of amalgamation, and hope for a great reduction in first cost, simplification and cheapness of erection, not forgetting efficiency in working. Our present system has got too much iron about it; too much to the foundries; too much for freight; too much for erection; too much wear and tear; too much money to start with.

To the following points you and all inventive miners should turn your attention: A complete mill to work a few tons per day; that will cost but little, weigh but little, and get more metal out at less expense. We must get over our high-horse ideas of big mills, and no dividends—work less rock and work it better. My motto for the future (and I have had as you know, some experience in large mills) is, small mills and large mines, instead of big mills and small mines, and too often no mines at all. Small institutions worked by miners on the coöperative system, will build up a country and reward the industrious, when waiting for capital won't pay, and going into large joint stock institutions will pay less. Fair, square, prudent and legitimate *work*, is what pays in the long run.

As to capital, you need not look to San Francisco for it for some time to come. She has got her hands full already with her homesteads and other assessments. You can all go to work with a blind horse and an arastra and make more money than you can possibly coax out of San Francisco by coming here after it. As you say, San Francisco has got to change her tactics, or Chicago will change them for her. She has got, too, to look after the goose that lays the golden egg, and help out small institutions as well as big ones, or the East will capture goose, eggs and all. There is no question about it. There has got to be a different state of things. But to square up and balance her accounts for a new start she wants all the money she has now got and you can get for her (without her putting any in) to do it. Once righted up, she will keep pace with the East. For the present, you will do best to turn your faces eastward, for awhile at least, for capital—invite it by your bullion and moderate proposition to associate mills with mines—make no demands for cash—take half the chances.

This you must do or do nothing, comparatively. The East are shy of names also. They have been so outrageously swindled that they shake their heads at a proposition for coin or greenbacks. But you can make them listen when they see you are willing to stake your labors on the turn of a small amount of their capital. A few successful enterprises would bring you millions. So much for the first; and now the second:

Labor and What is in the Future.

This question is what interests the masses. They are the poor devils of creation, for you know the proverb says there are three kinds of poor—God's poor, the Devil's poor, and poor devils. God takes care of His poor (the rich), the Devil takes care of his poor (the bad), but poor devils (the honest) have got to take care of themselves, and they outnumber, though they do not outwit, all others. The masses it is who have got to scratch; and yet it is their scratching which sends the world along. Capital *vs.* Labor is the great question of the day. This problem is moving on to a solution at a ratio but little considered even by the actors themselves.

The Chinese Problem.

One of the agencies that are going to give it impetus is the incoming of the Chinese, and it is of this I want to speak. At this state of affairs, when our country is likely to be overrun with them, it calls for thought and action for security against them by the association of capital and *white* labor to use them. And here let me say, your miners must stare facts square in the face, and arouse all their energies, not by brutish or unconstitutional acts, but by putting yourselves in a way to use them. They are coming by the thousands; Yes, tens of thousands. There is no staying it. State laws cannot be made strong enough to do it, and national ones will not be enacted to prevent it; all organizations combined can't stay it; nature's laws are inevitable, for it seemingly is manifest destiny. I accept it as such. I have fought it; for I see an evil in it, which only the lifting of ourselves square up in our boots, and declaring that we will turn an impending evil into a universal good, by resolving ourselves masters and they our servants, can avert. Every miner, if he has brains, can use them to a profit, in some part of the vast mineral domain. If he has not this requisite, he must abide the wave that is to carry him on or under. He must use them, or counteract this cheap labor by coöperation; for without this action by all, the rich will be richer, and the poor poorer. The rich will use them to build up colossal fortunes and power, and for the poorer to fight them without avail, is ruinous to them.

If this great Asiatic wave can be stayed, then I say Amen; but can you do it? The world seemingly has turned upon its axis crosswise. The magnetic currents have changed. With the Caucassian it has been westward ho! With the Asiatic it is now eastward. The Orient and the Occident are to mingle.

New York alone wants 100,000. The South asks for 50,000 at once. From the fact that a Commissioner from Arkansas has already been dispatched to China for thousands, I would not be surprised to hear any day, that every hatteau in the harbor of San Francisco that can brave the billows of the ocean, will be chartered for China to fill the demand.

I talk plain—not that I want it, but that I see it in the future, and my interests in behalf of those who labor, calls for candid declarations and timely warning, that you all may understand it, wake up to it, husband your efforts, and prepare to meet it.

New Mining Advertisements.

Silver Wave Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of August, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. se4

Silver Sprout Mining Company.—Location of Works and Mines: Kearsarge District, Inyo county, Cal.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-seventh day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Brown, H L	11	10	$5 00
Cleaveland, A H	7	10	5 00
Devin, J D	12	10	5 00
Gillis, John	unissued	640	320 00
Hearst, George	unissued	200	100 00
Jackson, Otis	9	41	20 00
McLaughlin, J W	unissued	1000	500 00
McMillin, Thos	10	20	10 00
Mott, E B, Jr	unissued	200	100 00
Winard, A	unissued	1060	530 00
Williams, Mrs. Mary	16	80	40 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-seventh day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the sales room of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, California, on the twentieth day of September, 1869, at the hour of 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. sep4

Mining Notices--Continued.

Allegheny Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of August, 1869, an assessment of fifty (50c) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventh day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the twenty-third day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. au7

Cordillera Gold and Silver Mining Company.— Morelos District, Chihuahua, Mexico.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty third day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No Certificate.	No. Shares.	Amount.
P M Jones	Not Issued	100	$100 00
S T Walch	76	10	10 00
W H Bennett	45	13	13 00
S T Walch	37	10	10 00
Alfred Harris	118	18	18 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-third day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, on Thursday, the ninth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

HENRY A. REED, Secretary.

Office, 321 Washington street, San Francisco. jy24

Evening Star, No. 1, Silver Mining Company. Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of August, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the fifteenth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. au28

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A G Chauche		2100	$105 00
L Franconi	7	1050	52 50
L Franconi	9	1150	57 50
E M Dency	46	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of July, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No 502 Montgomery street, Room 3, on the thirteenth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

AUG. DuPRAT, Secretary.

Office, No. 502 Montgomery street, Room No 3, San Francisco, Cal. au28

George Washington Silver Mining Company. Location of Works: White Pine District, Nevada.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the first (1st) day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
H K Snow	unissued	276	$27 60
J B Scott	unissued	1622½	162 25
J J Ryan	unissued	1000	100 00
C A Kidder	unissued	500	50 00
W J Nightingale	32	138	6 90
Geo W Vincent	33	138	6 90
W H Stanley	64 to 66 100-ea	300	15 00
W H Stanley	67, 68 10-ea	20	1 00
W H Stanley	71 to 85 10-ea	160	8 00
J S Voorhees	12	125	6 25
A M Brown	127	125	6 25
F A Cord	132	125	6 25

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

THOS. J. OWENS, Secretary.

Office, No. 10 Stevenson Building, San Francisco. jy10

POSTPONEMENT.—The above sale is hereby postponed until Thursday, the ninth day of September, 1869, at the same hour and place. By order of the Board of Trustees.

sep4 JOHN J. OWENS, Secretary.

Glenwood Mill and Mining Company, Green- wood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 418 California street, San Francisco. je12

Hamilton Hydraulic Tunnel and Mining Com- pany, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, San Francisco; or to M. T. Brewer, Hamilton, Nevada.

Any stock upon which said assessment shall remain unpaid on the tenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street San Francisco. au14

Delays are Dangerous.—Inventors on the Pacific Coast should bear in mind that by patronizing our Patent Agency they can sign all necessary papers for securing patents almost immediately, thereby avoiding months of delay requisite in transacting business through Eastern agencies.

Hornet Silver Mining Company.—Location of Works: White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of July, 1869, an assessment of ten (10c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the eighth (8th) day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the thirtieth (30th) day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. S. MARTIN, Secretary.

Office, No. 11 Hayward's Building, 419 California street, San Francisco. jy31

I. X. L. Gold and Silver Mining Company.— Location of Mine: Silver Mountain District, Alpine County, California.

Notice.—The Annual Meeting of the I. X. L. Gold and Silver Mining Company, for the election of Trustees for the ensuing year, will be held at the office of the Company, Pioneer Hall, Montgomery street, San Francisco, Cal., on THURSDAY, September 9th, 1869, at 2 o'clock P. M.

J. CROWNINSHIELD, Secretary.

Office, Pioneer Hall, Montgomery street, up stairs, San Francisco. au28

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fourth day of August, 1869, an assessment of two dollars and fifty cents ($2.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-fifth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary.

Office, 220 Clay street, San Francisco, Cal. au7

Marlborough Silver Mining Company.—Loca- tion of Works: White Pine District, (formerly Lander County), State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A G Chauche	8	2100	$105 00
Louis Franconi	7	1150	57 50
Louis Franconi	12	1050	52 50
E M Dency	63	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, California, on the thirteenth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

AUG. DuPRAT, Secretary.

Office, No. 502 Montgomery street, Room No. 3, San Francisco. Cal. au28

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of August, A. D. 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 520 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twenty-fifth day of October, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURFEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. au28

Thunderbolt Mill and Mining Company.—Loca- tion of Works: White Pine District, Nevada.

Notice.—There are delinquent, upon the following described stock, on account of assessment levied on the first day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J B Scott	unissued	6820	$291 00
H K Snow	unissued	1110	55 50
G Robinson	unissued	2200	110 00
Geo W Vincent	24	555	13 88
W J Nightingale	25	111	2 78
W J Nightingale	26	111	2 78
W J Nightingale	27	111	2 78
W J Nightingale	28	111	2 78
W J Nightingale	29	111	2 77
H B Scott	73	100	2 50
H H Scott	76	100	2 50
H K Snow	30	120	3 00
K K Snow	31	200	5 00

And in accordance with law, and an order of the Board of Trustees, made on the first day of July, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, on the thirtieth day of August, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

THOS. J. OWENS, Secretary.

Office, No. 10 Stevenson Building, San Francisco, Cal. jy14

POSTPONEMENT.—The above sale is hereby postponed until Thursday, the ninth day of September, 1869, at the same hour and place. By order of the Board of Trustees.

sep4 JOHN J. OWENS, Secretary.

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

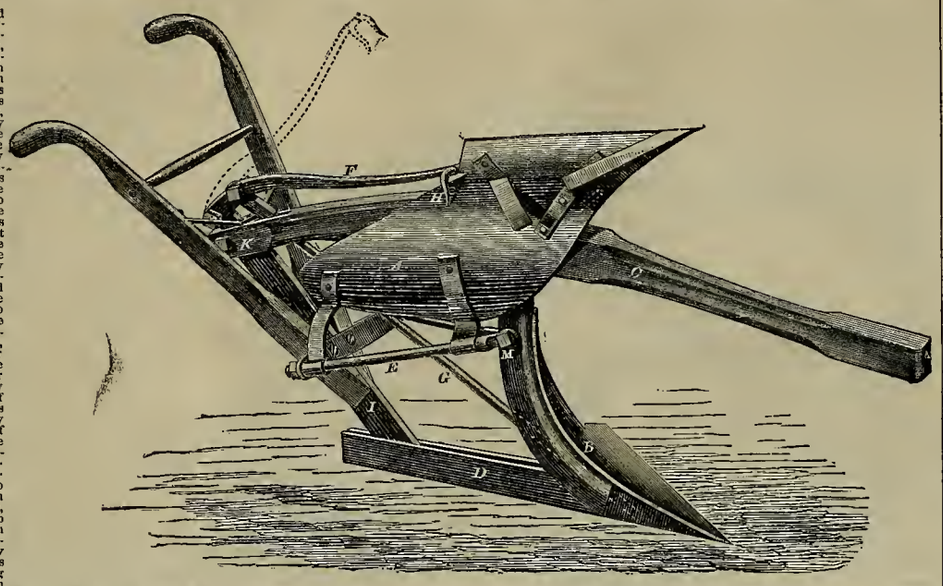
Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 439 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Friday, the seventeenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the seventh day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. H. RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. au14

SCOVILLE'S CLIMAX SIDE-HILL PLOW.



The advantages claimed for this new Patent California Plow over others employed for similar work, consist in its being so constructed that the plow which is not in use is thrown up in such a manner as to rest its weight upon the beam, as shown in the engraving, where the plow A, is firmly held by the hooks upon the end of the iron arm, F. The weight of the upturned plow is thus made to aid in keeping the opposite plow to its work in the ground, while the balance of weight is so equally divided as not to give an excess on one side. Its position is also such that it does not in any way interfere with the plowing, and the person who holds the plow can see to handle it as readily as though the mold-board was not resting upon the beam. The handles are so arranged as to give to the holder a sure and easy control of the plow. The rod, G, is operated by the arm or lever, F, so as to lock the plow to be used in its proper position in the standard, by entering a slot in the toe of the land-side, D. When it is desirable to use a single plow (as on level ground) either of the mold-boards may be quickly removed by loosening the nut, M, and removing the rod, E, thus converting it into a single plow. The mold boards are hung upon two angularly-placed axles, one of which belonging to the plow not in use is shown at E, with its mode of attachment to the axis. The plow may also be used double, as for ditching, etc., by slipping a cap over the joint of both plows when in proper position. The mold-board being made of the best of steel, and of a peculiar shape and great acuteness of sheer, will free itself or scour in all kinds of soil, and requires fully twenty per cent less draft than any other plow of same size. It turns the soil so as to bury the stubble, and leaves the ground in a good condition for seeding. This Plow has been successfully introduced, the following parties, among others, already having them in use: J. J. Reed, Marin county; A. F. Scott, Centerville; George W. Shade, Watsonville; James McCormick, Pescadero; and J. J. Wood, J. B Gilchrist and J. B. Jones, of Spanishtown, San Mateo county, California.

TWO SIZES kept constantly on hand 10-inch and 12-inch cut, weighing 90 and 105 pounds. Price for each, **$35**, and with two extra Shares, **$40**. Will make any size to order. If, after a fair trial, the buyer is not satisfied, he can have his money back. Purchasers can depend upon every Plow being of good quality and make throughout.

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Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description,

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

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To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their Inventions. 1v16tf

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Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

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21v16-3m W. McCRINDLE, Manage.

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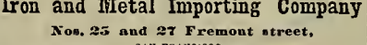

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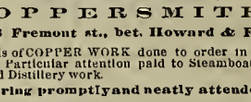
10v18qr



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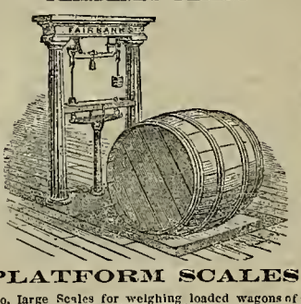

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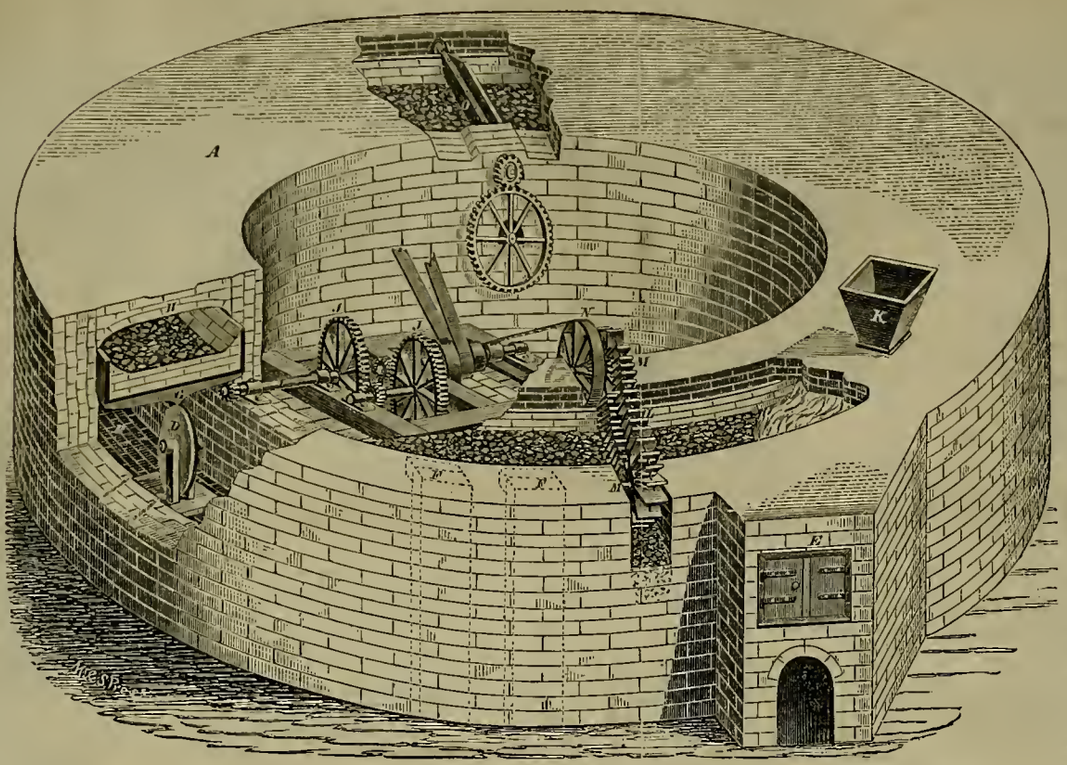
Fred. Ernst's Patent Rotary Roasting Furnace.



This is a mechanical furnace, which does away entirely with manual labor, excepting a fireman. It charges, roasts, stirs, and discharges the ore by a very simple mechanical contrivance,—in fact performs all the operation required in the oxidation or chlorination process of roasting gold or silver ores.

The ore is taken by means of an elevator from the battery, and is discharged constantly and regularly into the hopper, K, from whence it reaches the rotating hearth, G. This hearth consists of a cast iron orbicular ring paved or lined with bricks, and revolves on a series of iron rollers, D, and is kept continually in motion by means of the gearing, J. This gearing has two gear wheels, three feet in diameter, and pinions to regulate the speed from the cone pulley, increasing or diminishing it to conform to the required slow motion of the hearth, G. The hearth so charged and running constantly carries the ore into the first heat, which is next to the flues, and so passes all the different temperatures of the furnace, thus effecting a very uniform heating and chemical action on the ore; at the same time it has also to pass the stirrers, of which there are different kinds,—stationary and movable ones,—the number and speed of the latter varying according as the ore contains more or less sulphur. The movable paddle stirrers are shown at O. These movable stirrers are connected with the gearing under the iron bed of the hearth, G, as shown at different points, until it passes the fire-bridge, where it receives its ultimate and highest heat, and is then discharged by the discharging apparatus. This discharging apparatus consists of two chain or rag wheels, M, M. These two chain-wheels drive a double endless chain with inserted plates of iron (scrapers). The chain hanging loose underneath between the wheels draws these iron plates through the cavity of the hearth, and so discharges constantly the roasted ore. To keep the current of air constant throughout the whole length of the furnace, the arch over the hearth decreases slightly from the fire-bridge toward the flues. For concentrated sulphurets it may be advantageous to increase the circumference of the hearth. The advantages claimed as attainable from the use of this machine are—the doing away with a large portion of the costly hand labor ordinarily required, and the better and more thorough accomplishment of the same by machinery. A great saving of fuel, not only through the length of the hearth, but also for the reason that all the gases which are lost by other furnaces are economically employed in this as a substitute for other fuel.

The furnace is so constructed that the large access of air required for the oxidation of the ore, in addition to that demanded for the consumption of these gases, does not operate to materially lower the temperature in the furnace. When the ore in this furnace is once desulphurized, the gases cannot form any new combination with the ores or metals therein, for the reason that while the currents of air and gases are moving to the rear, the furnace hearth is constantly advancing in an opposite direction.

The construction of this furnace is of the simplest kind, and all the necessary castings can be easily transported even on mule-back. The loss of the silver by sublimation in present furnaces, it is claimed, is avoided in this, as the silver condenses before reaching the flues; the distance being great, and the heat diminishing gradually until the gases reach the point of final exit. Liberal terms are offered to parties who desire to use this furnace. Further information can be had by addressing the Inventor and Patentee,

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For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

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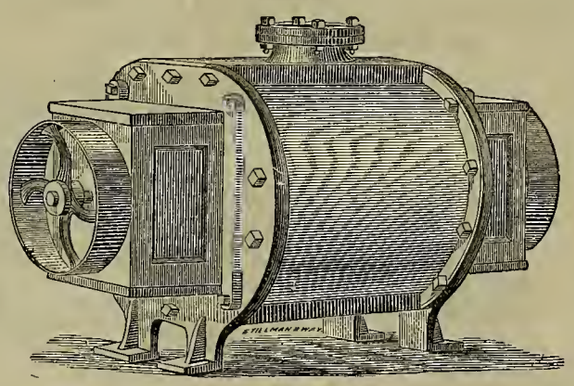
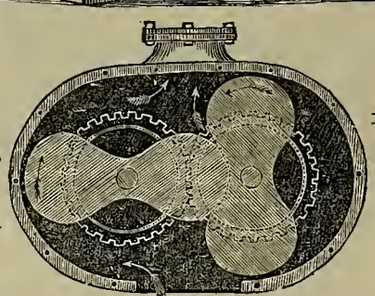


Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.



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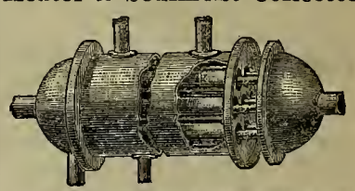

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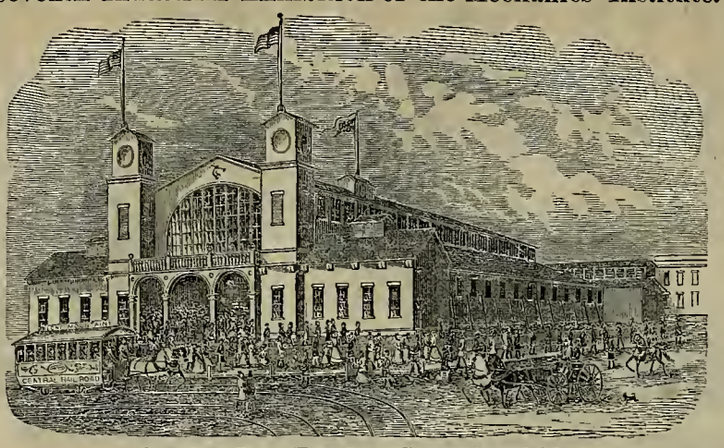
Seventh Industrial Exhibition of the Mechanics' Institute.



Opening Day, Tuesday, September 14th.

The Board of Managers of the Seventh Industrial Exhibition of the Mechanics' Institute announce to the public that the FAIR PAVILION ON UNION SQUARE will open on TUESDAY, SEPTEMBER 14, at 11 A. M., with the usual ceremonies.

The success of the last Fair was beyond the expectations of the Managers, and the satisfaction to the public was acknowledged by all. In the coming Fair, numerous additional attractions will be presented. Applications for space to exhibit have been received from foreign countries and the Eastern States, and the Managers confidently predict an Exhibition never equalled in California. Steam power will be furnished necessary to drive all machinery.

The Pavilion has been improved in many respects, and now covers an area of 90,000 feet. A new gallery has been erected, and additional decorations will be employed. The Pavilion at night will be illuminated by 1,300 gas jets, presenting a magnificent spectacle.

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The restaurant and refreshment departments will be in competent hands.

Admission:—Season ticket, admitting a gentleman and lady, $5; season ticket, admitting single person, $3; single ticket, 50 cents. Children, half price.

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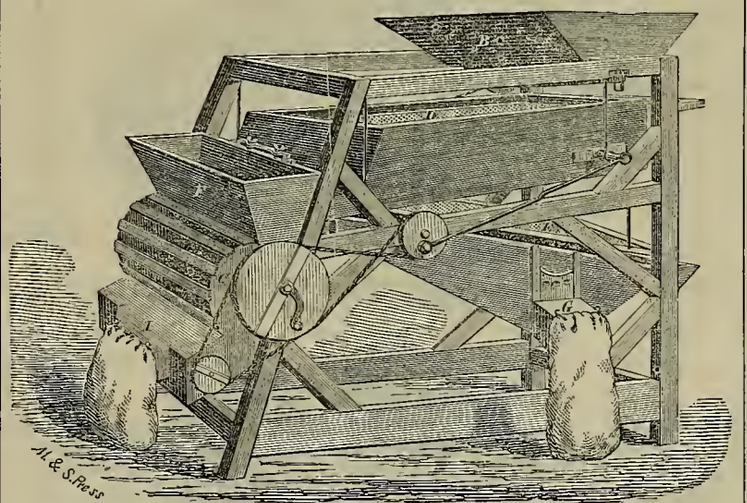

It Cleans Perfectly all kinds of Grain, and Separates Seed Wheat from Small kernals, Mustard, Barley, Oats, Cockle Pods, and other Impurities.

DESCRIPTION:

The grain is first emptied into a hopper, *B*, and is discharged through an adjustable feed gate, upon a series of shaking screens, *D*, which are so arranged that the crushed seeds and chaff will be caught by the first screen, the barley and oats by the next three, while the fair wheat which is fit for seed will be caught by the next screen, and discharged from it into the mixer, *C*. A finer screen, *E*, placed just below the one last mentioned, catches small wheat and saves it; but allows mustard and similar small seeds to fall upon the ground, or it may be saved and sacked at *G*. The tank *F* is filled with a solution of sulphate of copper, which is introduced gradually into the mixer, *C*, and the wheat is stirred and intimately mixed with this solution by revolving stirrers, after which it is discharged over a screen which frees it from surplus moisture, and passes it to the sacks, or trough which may be placed below the spout *I*.

The machine works equally well for cleaning wheat alone without using any mixture. When constructed for warehouse and mill use exclusively, the mixing apparatus is left out of its construction.

The inventor has for years bestowed much attention and labor on the construction of his machine, and has succeeded in making it durable and simple, and not likely to get out of repair. It can be easily adjusted and operated by any boy or man. It will soon save its cost in the labor of mixing "bluestone," which work it does more evenly and better than it can be accomplished otherwise. Come and see it and try it.

Single machines for sale. State and County Rights for sale on favorable terms to those who call early.

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Inventor and Patentee.

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Messrs. A. S. Hallidie & Co.:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

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Assay Office of D. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1857, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adins, Gaudier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, D. HARRIS.

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BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, SEPTEMBER 11, 1869. VOLUME XIX. Number 11.

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California Academy of Sciences.

The California Academy of Sciences held its regular semi-monthly meeting at the rooms on Clay street, on Monday evening last, with a fair attendance of members. Mr. W. H. Haskell was proposed for membership. Dr. A. W. Saxe presented some specimens of the redwood log, heretofore mentioned in these columns as having been found 200 feet below the surface, by parties boring an artesian well in Santa Clara County. A diagram was also presented, showing the different strata of mud, sand, etc., passed through in boring the same well to the depth of 328 feet. A very interesting discussion followed with regard to these deposits, and the manner in which the fiber of the wood presented had been so perfectly preserved—wood found at such depths being usually carbonized.

Several specimens were received for the cabinet and museum, among which was the fossilized jaw-bone of a shark twenty-one feet long. Dr. Cooper gave notice that he had a paper which he should soon present for publication, on the animals of California.

Dr. Blake called attention to the singular phenomenon which was generally observed throughout the State, a few weeks ago, of a peculiar light in the heavens soon after sunset. The Doctor said he could explain it only by supposing it to have been caused through the agency of a vapor or smoky medium, which, at a high altitude, would reflect the sun's rays in such a manner as to present just such a phenomenon as was then noticed.

A request was expressed that each individual member of the Academy would gather all the information he could conveniently obtain, concerning the various weeds and plants that have been imported into California, and become naturalized here. The object of collecting this information is the preparation of an article on the subject, which shall, by the combined aid of the various members, be as complete as possible.

THE MEDICAL JOURNALS.—We acknowledge the receipt of the *Pacific Medical and Surgical Journal* and of the *California Medical Gazette*, for September. The first is published by Bancroft & Co., the other by Roman & Co. We wish both God-speed. The entire community is interested in the progress of medical science.

The Mechanics' Institute Exhibition.

The mechanics of San Francisco have already more than once borne off the palm for the most successful Industrial Exhibition ever presented to the people of the United States, and they are now determined to excel even any past efforts of their own. The people of this city and State never undertake trifles. In whatever enterprise they embark, no matter what its nature may be, they never measure their efforts by what has been done before; but improving on the past, strike out anew for that which has not hitherto been reached.

It was feared, a short time since, by the friends and well-wishers of the enterprise, that the late reaction and unsettled condition of business, might have a bad effect on the Fair—but to-day we can safely say that such fears were without foundation. The sons of toil, of skill, of enterprise and of art, are about to assemble once more in the Temple dedicated to their efforts, where they will add yet higher honor to themselves; and in the quiet walks of peace earn laurels, brighter, greener, and more lasting than ever crowned the brows of the proudest of earth's tilted lords. The foot-prints in the progress of civilization which will there be shown in wood, iron and marble, and in all the multifarious forms which toil, genius and art can devise for the pleasure and profit of man, will be more imperishable, and far more glorious than the proudest monuments raised in commemoration of the grandest wars, the memory of which history has or will preserve. The victories of industry and genius are constantly being reproduced—they never die out. Man is always more ennobled, always more god-like when creating, than when destroying.

We trust the mechanics and citizens, generally, throughout the State, will extend to this new effort all the encouragement in their power to make this SEVENTH EXHIBITION of the industry of California, that success which it so well deserves—to make it one of which the whole State and the entire coast may well be proud—one which will astonish the world by its extent and excellence. We should bear in mind that thousands are now seeking our shores from every quarter of the globe, filled with curiosity to see what California, what the Pacific Coast, can do and produce. Marvellous stories have been told of us abroad—of our rich and varied mines, of the wonderful productiveness of our fields and forests, of the genius, enterprise and industry of our people. All these things are being concentrated into representative form, in the great Temple of Industry, which has been reared in the heart of our city. Let the few remaining days and hours which are left, to still further perfect that work, be fully improved, to the end that we may not be subjected to criticism by reason of the slightest failure. The good name of our State, and of her people, were never more at stake than now. We never before had so many curious, peering eyes following our footsteps, to seek out our weak points, or become more thoroughly and practically acquainted with our possible advantages. The good repute of our State, its industrial and commercial advantages, the opportunities which are actually presented to immigration, were never before so directly dependent upon a public showing, never before held so intimate a relation to the success or otherwise, of a Mechanics' Fair. Therefore, let every one feel it a duty he owes to himself, and to the State, to do all that he reasonably can in behalf of this exhibition.

It is not even *now* too late for special efforts. Nothing will be left undone on the part of the managers, to afford every possible facility, even to the most backward of those who may manifest, at the latest hour, their desire to take an active part in the Exhibition. Let every one come forward and take hold of the work with that earnestness and vigor which has heretofore been so characteristic of California enterprise.

THE PENNSYLVANIA CALAMITY.—The papers of the week have been filled with accounts of the most frightful coal-mine horror ever known in our country. The Avondale mine, near Scranton, Pa., took fire on the 5th inst., from the furnace used for ventilating purposes. The flames were communicated to the hoisting works, which were destroyed, and escape rendered impossible. It was at first positively stated that nearly two hundred men were in the mine; but it has since been ascertained that the total number was one hundred and eight. As soon as it was possible, men were sent down to explore the workings; and on the 8th the bodies were found collected in one of the chambers, behind two barriers which the unfortunate men had built of coal and clothing, in the vain hope of excluding the suffocating smoke. At last accounts (telegram of the 9th) all the bodies had been recovered.

By this appalling catastrophe, six hundred women and children are left destitute. The New York Board of Assistant Aldermen has appointed a committee to receive subscriptions for the widows and orphans. The Gold Board and Stock Exchange appropriated $3,000 for the same object. The coal operators are also moving in the matter.

PERSONAL.—We understand that Mr. Horace Adams, who has been acting as superintendent of Goss & Lambard's foundry, Sacramento, for the last fourteen or fifteen years, has taken the place of Mr. Detrick, late superintendent of Booth & Co's (Union) Iron Works in this city. Mr. Adams is a thorough mechanic, and one who has ever commanded the respect of all with whom he has come in contact.

A USEFUL DEVICE has been invented by Mr. C. H. Horne, of Astoria (Oregon), whereby a rider is enabled, by pulling a strap passing through rings, to tighten the girth of his horse without dismounting or slacking his speed.

Write English.

Thousands of readers of the daily newspapers and of popular works on agriculture, mining, mechanics, etc., mentally ask, when they read scientific descriptions of fruits or flowers, of metallurgical or chemical operations, why the writers do not employ simple words in their descriptions, and more generally avoid the use of scientific terms, when plain English will often answer just as well or better. In writing for the scientific reader alone, there is, perhaps, less cause for such care, as to the educated mind such terms are often more precise, and better adapted for accurate comprehension; but when one is writing for the million, the plainest and simplest English should always be employed when practical, even to the risk of being sometimes slightly misapprehended.

As an example, take the following description of a plant: "Stem erect; leaves globose, pubescent on the under side; flower at first erect, afterward pendant, etc." Now take the same in English: "Stem upright, leaves egg-shaped, hairy underneath; flower at first upright, afterward drooping." If the last description does not convey the idea exactly, to common minds, then the English language is not lucid enough to convey *any* meaning.

PARIS EXPOSITION REPORTS. — We acknowledge the receipt, from Prof. W. P. Blake, of the report upon Steam Engineering, as illustrated by the Paris Exposition, prepared by Wm. S. Auchinloss, Honorary Commissioner. Also, the receipt, through Prof. Blake, of the report upon Machinery and Processes of the Industrial Arts, and Apparatus of the Exact Sciences—prepared by Prof. F. A. P. Barnard, of Columbia College, United States Commissioner. Like all the reports of the Commissioners, these are beautifully printed and illustrated. Both are valuable books, but we prize that prepared by Prof. Barnard, of 650 pages, as a very important acquisition. The double duty which devolved upon the Professor, of reporting upon "Instruments of Precision and Apparatus of Instruction in Science," in addition to the part originally assigned to him, as one of the Committee upon "New Inventions in the Useful Arts," is evidence of his especial fitness for the position; and it is fortunate that the work of placing before the reading world the finest display of instruments that the world has ever known, has fallen into such good hands.

DISTRIBUTION OF PLANTS.—The importance of a plant well bestowed is strikingly exemplified in the fact that all the coffee plants now cultivated in the West Indies have sprung from a single specimen given in 1720 to an officer of a French war-ship, by the Director of the Garden of Plants at Paris, with a request that he would pass it over to some one at Martinique, whither the ship was going, who would undertake its cultivation and propagation on that island.

Familiar Science.

Insect Bites and their Remedy.

When a mosquito, flea or other similar insect punctures the human skin, it always injects an atom of an acidulated poisonous fluid, which produces more or less irritation, according to the susceptibility of the system which is attacked. In the case of these insects, the attack is innocent of intended harm—food being the only object in view. A similar injection accompanies the sting of bees, wasps, etc., which is made not for food, but for defense or attack against a real or supposed enemy. The pain induced in most persons by the former, and always by the latter, excites the sufferer to seek a "remedy."

Bearing in mind the fact that the poison injected is of an acidulous nature, the obvious remedy is some *alkali* which will most promptly and effectually neutralize the *acid* of the poison. Ammonia or borax are usually the most convenient alkalies to be obtained, and quite as effective as anything which can be suggested. The former is usually employed; but chemists and physicians, of late, more generally recommend borax, the alkaline reaction of which is quite too little appreciated. This salt is useful in many ways, particularly as an aid in the washing of clothes, and should always be kept in the house. If those who are subject to insect annoyances would keep a solution of borax by them, and apply it as soon as possible after being bitten, they would find the application a great relief.

Bathing the face and hands with a strong solution of spirits of camphor, before retiring, will, with many persons, keep away mosquitos, as those troublesome insects, as well as most others, appear to have a decided aversion to camphor. Moreover, such a face bath, with most people, is a very agreeable one, apart from any indirect benefit.

In making a borax solution, the water should first be thoroughly boiled and then set away to cool, before the borax is added, after which replace it over the fire and boil again. The bites should be sopped freely and often with the solution, until the irritation passes away. For flea and mosquito bites, an ounce and a half of borax should be dissolved in a pint of water. For the sting of bees, three ounces should be used. The solution should be more or less strong according as the system is more or less susceptible to irritation from such causes.

The so-called "bites" of the common house-fly are quite different from the bites of the other insects named. Theirs is more of a tickling sensation, and is produced from suction without puncture or injection. Such bites are, sometimes, but only in rare and exceptional cases however, not only dangerous, but even fatal. A fatal case from such a bite occurred in Oakland, two or three weeks since, where a lady was bitten on the face. A very severe case occurred in Troy, N. Y., some six weeks since, where a man was bitten between the thumb and forefinger, from which he came near losing his arm. Other severe cases have been noticed in different localities the present season. The irritation or danger in such cases, does not arise from any poison *injected;* but from poison communicated by *touch*, from some carrion upon which the fly had previously been feeding. Such cases are similar to those which surgeons often meet with, who accidentally wound themselves with the knives employed in dissecting operations. The fly, by suction, opens the pores of the skin so as to allow direct communication between its little proboscis and the blood of the individual attacked; hence the effect. When there is reason to believe an occurrence of this kind has taken place, a physician should be called at once.

The Friction of Water in Tubes.

The friction or resistance which water encounters in its passage through tubes is much greater than generally supposed. The amount of resistance depends materially upon the smoothness of the walls of the pipe. This resistance is due to the particles of water, which, on coming in contact with the irregularities of the inner surface of the pipe, are thrown out of their true course, and thereby are not only delayed themselves, but impede the motion of other particles, in their onward flow. Experiments have proven that an inch tube 200 feet in length, placed on a level and connected as a discharge pipe from a tank, delivers only one-fourth as much water as escapes through a simple orifice in the tank, of the same diameter as the pipe.

Air passing along tubes, is also much retarded, as miners who are obliged to employ such tubes for the ventilation of their mines, are well aware. It is on record that a person connected with a mine in Europe, without properly considering this fact, once erected heavy bellows, for ventilating purposes, at a water-power two miles from his mine. When he set his apparatus in operation, he found it totally useless—his power was entirely taken up in the friction of the air through his two miles of pipe.

It is a singular fact that the friction of a liquid decreases in proportion as its temperature is increased. This is supposed to be due to a diminution of the cohesive properties of the particles of such liquid. It is well known that the more cohesive the liquid is, which is passed through a tube, the greater the friction and the slower the flow. This is apparent in the comparative flow of such liquids as water, oil and syrups.

The velocity of water issuing from an orifice is as the square root of its altitude. Thus, calling the velocity of issue under one foot pressure, 1, the issue under 4 feet pressure will be 2; 9 feet 3; 16 feet 4; and so on. A *short* tube is found to discharge water much faster than a simple orifice in a vessel, without a tube; the difference in favor of the tube is nearly one-half. This is due to certain peculiarities in the flow of liquids which can only be explained by the use of diagrams.

The simplest way of ascertaining the rate of discharge from an orifice, such as a pipe, duct or drain, is to measure the quantity discharged in a given time. Such mode of determination may be readily employed where limited discharges only are in question.

Rhubarb Leaves.—There has been some considerable discussion, of late, with regard to the action of the *leaves* of the common pie-plant, on the system, when eaten as greens. A family of five persons, in Indiana, was recently poisoned by partaking of such diet—one of whom died. Nine boys are said to have been poisoned in Chester County, Penn., by eating of the leaves—five of which died. Other cases have been noticed. The question seems to be whether the deleterious action results from some specific poison in the leaf, or from the fact that the pie-plant, like many other generally innocent articles of diet, are poisonous to certain constitutions. The leaves of this plant contain considerable oxalic acid, and it has been suggested that the deleterious effects proceed therefrom, being perceptible only on such constitutions as are particularly susceptible to the action of that acid. The facts are such as should induce great caution in the use of the leaves of that plant, although the stem may be used as freely as any other article of vegetable diet.

Lava Flow over Ice.—Lava has been known to flow over a layer of ashes, underneath which is a bed of ice. The non-conductivity of the ashes saved the ice.

A Phosphorescent Foot.—A Boston lady, recently, when about to retire, observed that a phosphorescent illumination appeared to proceed from the upper side of the fourth toe upon the right foot. Upon rubbing it the light was increased and spread over the upper portion of the foot, accompanied with a disagreeable odor. The phenomena, which was continued nearly an hour, was also witnessed by the lady's husband, who communicated the fact to the Boston *Transcript*, asking for an explanation thereof. Phosphorescence from a living body is certainly something new. A natural cause for the phenomena might suggest itself in the minds of some, if there was not reason to believe that the foot was subjected to frequent ablutions. Moreover, soap and water were freely applied as soon as the phenomena was observed, but without any apparent effect toward its abatement.

Poisonous Potatoes.—The sprouts of a potato contain an alkaloid, termed by chemists solanine, which is very poisonous, if taken into the system. This alkaloid does not exist in the potato itself, unless it has been exposed to the light and air, during its growth, by which it takes on a blackish-green color, upon the exposed side. Potatoes presenting such an appearance should never be cooked or fed to stock—they are poisonous to both man and beast.

Poisonous Candles.—There is a kind of stearine candle, which is remarkable for its alabaster whiteness; but it contains *arsenic*, and its use should be avoided. These candles may be known by the emission, when burning, of a more or less perceivable garlicky smell, and the giving off of a slightly perceptible white smoke. When broken they present a somewhat spongy fracture, rather than crystalline, as is the case with the genuine article.

Avoid Red Colors Next the Skin.—Many of the dyes now largely employed in woolen manufactures, are deleterious if not absolutely poisonous, when brought in contact with the skin by constant wear. Stockings, with red rings around the top, have been known to cause severe inflammations; even the time honored red flannel which was so innocent and comfortable in the days of our grandmothers, is now often colored with chemicals which are poisonous. The only safe color, now-a-days, for wearing next the skin, is white.

Horse-hair Snakes.—The American Entomologist thus disposes of the reputed horse-hair snake:—"The popular notion that these animals are animated horse-hairs is nothing but superstition. Like every other living creature, including ourselves, they spring from an egg in the first instance. They are not true insects, but belong to the Class of Worms; and just as man has intestinal worms that live and thrive in his body, so many insects are infested internally by these so-called horse-hair snakes. We have ourselves seen living specimens six inches long, that came out of the gigantic caterpillar, and have often seen smaller ones come out of grasshoppers."

To Whiten Beeswax.—Take the cleanest beeswax you can obtain, melt it in hot water, skim it out into a cup or basin previously oiled; when quite cold cut the wax into thin slices; expose these to the action of the sun and air upon white dishes, sprinkling it, unless there be rain, once or twice each day with clean water. At the end of a week melt the wax again, and proceed as before. In hot weather the wax may be floated on water in the middle of the day. This method is convenient for small practice; but white wax for commerce is prepared in large quantities by chemical process.

To Remove Writing Ink.—To remove writing ink from paper without scratching, apply with a camel's hair pencil a solution of two drachms of muriated tin in four drachms of water; after the writing has disappeared, pass the paper through water and dry.

Communications.

Mining in Eastern Nevada.

[Written for the Mining and Scientific Press.]

Editors Press:—From the flush times of a growing excitement, to a period of deep depression; then slowly reacting, the normal level of healthy business has at length been reached. Varied by time and circumstances, such is the history of every mining community; and such has been ours in Eastern Nevada.

The immediate effect of the discoveries at White Pine, during the summer and fall of 1868, was to deplete of population, to a great extent, other and older districts with fewer surface attractions; especially in the counties of Nye and Lander. Had the excitement that followed the development of the Eberhardt, Hidden Treasure, and other mines in that district, proved to have been as baseless and ephemeral as mining excitements usually are, and as many gravely prognosticated, the result would have been disastrous in the extreme, to the hopes and reasonable expectations of those who have waited, with commendable patience, for the aid of a little well-directed capital in developing the numerous lodes of undoubted value and promise, in our older districts, that have lain comparatively unworked and unproductive for years, and under the ban of popular distrust and neglect. The substantial evidence of the permanence and value of the mines at White Pine, afforded by the large and constantly increasing yield of bullion, has fortunately served to redirect the attention of practical miners, especially, to the favorable opportunities presented for acquiring valuable mining properties at reasonable prices, in what the *Reveille* was wont to term, "outside districts;" and where the early prospectors and settlers, with a large stock of hope, and a small stock of money, but with a just appreciation of the value of their possessions, have for years eked out a precarious subsistence, by occasionally hauling a few tons of well-assorted ore to Austin, or some other distant point, and converting it into coin at a round cost of $85 to $100 per ton for freight and milling.

The lethargic condition of the mining interest in most of the districts of Eastern Nevada, during the past three years, however it may be viewed from abroad, was produced mainly by the untoward success of Eastern companies, whose capital, with few exceptions, was recklessly squandered by high-salaried and shamefully incompetent superintendents; who, instead of being practical miners, and having an experience acquired by a residence in a mining community, seem to have found their way into such positions through the nepotism of some prominent stockholder or director. Many companies that had secured titles to properties of undoubted value, were induced to withhold the necessary means of development by a fear of similar results, but without a knowledge of the causes that inevitably led to them. Among those of the latter class, I may mention, without making invidious distinctions, the Ural S. M. Co., of the Mammoth district, and the Florence S. M. Co., at Ione, each owning a series of lodes that with a reasonable amount of capital, judiciously expended, could, in a few months, be made dividend paying mines. Other companies under capable and economical management, and on the evo of assured success, like the Mt. Vernon, at this place, were, for the same cause, induced to suspend operations, and allow their property to go under the hammer, at a tithe of its value. At present, however, there seems to be a healthy revival of confidence in legitimate mining enterprises, especially in this immediate section; as is evidenced to some extent by the fact that in this district we have a home company (the Pioneer), with a capital, hard earned by its stockholders, engaged in erecting a 10-stamp mill, with facilities for working both gold and silver ores, and with satisfactory assurances that the business can be made a success.

We do not expect much material aid from California until her business men shall have done experimenting with an inexpansive currency, and with trying to buy and sell a harvest worth fifteen millions, with interest at three per cent. per month. In the meantime we must help ourselves as best we may, and turn our faces east.

Icon.

Ellsworth, Nev., Aug. 27, '69.

Mechanical Progress.

THE THOMAS ENGINE-LATHE.—The N. Y. *Mining Journal* gives an illustrated description of this lathe, made in Worcester, Mass.: "Its sides are firmly tied together with cross-ties, unlike the common weight-lathe, and it has a large, powerful cone, with large gears, spindles, and centers to match, with hard gun-metal boxes, making it a powerful machine. The carriage is so constructed that it may be used with any improved weight alone, or it may be tightened with a hand-wheel and gib under the carriage, which makes the carriage slide firmly, thus adapting it to boring or squaring work at will. This carriage is very wide on the track, and will square out the full swing of the lathe without re-setting the tool, and it has no long, deep slot to get filled with chips, to be cleared out with an old file-shank, to the injury of the screw, but the top is plain, and protects the screw from dirt. The upper portion of the carriage removes, exposing the bolt-slots, for the purpose of bolting on work to be bored out. There is a shoo, or tool-post holder, which is reversible, that goes with the machine, for turning pulleys. The screw-cutting arrangement dispenses with an extra intermediate gear, by changing from right to left by means of a simple lever, and the screw attaches to the carriage by a clamp-nut, which is always ready at any distance from the head. The foot-block fastens with a star-wheel, which is a very quick and effectual operation, and dispenses with the old-fashioned bolts and nuts."

THE "FINISH" OF RUSSIA IRON.—One process is as follows: "The sheets are taken as they come from the rolls, and given a thin coating of petroleum. A number are then put together, enough to make a pack weighing three hundred pounds. The pack is placed in a muffle, closed up air-tight, and heated to from 800° to 1,000° Fah., where it remains about one hour. This, it is stated, converts the black oxide into a protocarbide of iron. Then the pack is placed under a heavy steam-hammer and worked until it is quite cool. The hammer-ram weighs seven tons, is self-acting, and strikes one hundred blows per minute. The striking surface of the dies is about one hundred and thirteen square inches, and the impact is equal to two hundred and forty tons. The anvil weighs thirty tons. Lighter machinery will produce the finish, but not so well or economically. In warm weather the pack must be hammered about twenty-five minutes continuously. One hammer will finish off from four thousand to five thousand pounds in ten hours."

MONSTER SCREW.—Another prodigy of iron work has just been turned out from the Corliss Steam Engine Works in Providence. It is a propeller screw for the United States steamer "Pomponoosuc," 18 feet in diameter and fitted on a wrought iron shaft 18 inches in diameter. The hub of the screw is 4 feet long and 11 inches thick. The screw is a solid casting of bronze metal—88 parts copper, 10 of tin and two of zinc, weighs 35,273 pounds, and is worth about $20,000. It is the largest casting ever made in Providence, and is a specimen of perfect workmanship.—*U. S. R. R. Register.*

UNLOADING BOATS BY MACHINERY.—The St. Louis Grain-Elevator Company have constructed a new machine, on the endless chain or platform principle, for unloading boats: "At intervals of four feet on the moving platform are fixed blocks, to hold barrels and hogheads in place, the width being four feet, sufficient for a hogshead of sugar. It is run by steam, and is capable of unloading 1,000 barrels of sugar, 700 barrels of salt, or 150 hogsheads of sugar per hour. Sacks of grain can be unloaded as fast as they can be put on and taken off. It extends a distance of fifty feet, and reaches from the guard of the boat from which goods are to be unloaded a considerable distance into the warehouse. It is also arranged so that it can be adjusted to high or low water."

HEAVY WATER PIPES.—The Warren Foundry, of Phillipsburg, are completing for the use of the Jersey City Water Company, 80 pipes to lay across the bed of the Hackensack River. These pipes will weigh from 6700 to 7000 pounds each, and are joined by a ball or universal socket five inches in thickness, the joints of which are turned perfectly true. This will enable the pipe to rise or fall in conformity with the bed of the river, without interfering with the flow of water which passes through them. The pipes are said to be the largest of the kind that have ever been made.—*Iron Age.*

THE PRINDLE RAIL.—This new rail differs entirely from any now in use. The *Rail Road Register* says of it: "Mr. Prindle uses two bars, side by side, confined in a plain chair which has one side higher than the other. In cross-section each bar has a half dovetail form. When one is turned upside down, they fit together, so as to make a nearly square split-rail, having, in fact, an oblong square cross section. Each bar being grooved lengthwise on its broad-side, it follows that the compound rail has a slot or groove running each side of its whole length. A jog on the inside face of the lower arm of the chair fits into one, the inner, groove of the rail. A groove in the inside face of the higher arm of the chair corresponds to the other or outer groove in the rail. Thus the groove in the chair and one groove in the rail make a square hole between the chair and the rail, into which slides a long square rod or key, which holds all firm. No matter how the rails are laid the grooves come all right on both sides. But Mr. Prindle lays the broader edge of the outside dovetail bar uppermost, and thus gets, as he thinks, a powerful *binder* for his inside bar.

The ease with which the rail is laid, and reversed when one face is worn, without disturbing its chairs is a great recommendation. But we do not see how, in a climate like ours, any split rail can escape destruction by frost and sand in the split."

ENGLISH AND AMERICAN LOCOMOTIVE BOILERS.—We quote the following from *Engineering*, of August 13th: "In America locomotive boilers, although under quite as skilled superintendence as our own, are yet more liable to explosion from the fact of their having generally less superfluous strength when new than would be considered necessary by our railway engineers. American locomotive superintendents use 5-16 in. and 3-8 in. plates, where we should use 7-16 in. or 1-2 in.; and notwithstanding the high pressures used, double riveting is still the exception rather than the rule. The consequence of all this is that in a list, now before us, of ninety-four boiler explosions which occurred in the United States during 1868, no less than twenty-three explosions of locomotive boilers are recorded, these explosions thus amounting to over 25 per cent. of the whole; while from another record of the explosion which took place in the month of May last, we find that during that month four locomotives exploded on different American lines. These are facts which demand the serious consideration of American locomotive engineers."

CLOTHING BLAST PIPES.—"Cleveland iron-masters are particular to clothe every bit of hot blast pipe very carefully with some good non-conductor. The cheapest and best plan for doing this is to take one part of salt, one of whitening, and two of puff of cinder (to make puff of cinder, fill a molder's hand ladle with liquid cinder, and then empty the cinder into cold water; it must be crushed afterwards). To the above four parts, add a good quantity of cow hair and mix up with water to a proper consistency for plastering. For first coat make it so liquid that it can be put on with the whitewash brush, and afterwards lay it on with a trowel as roughly as possible, not more than half an inch thick at a time. After three coats wrap it with iron wire and you can continue this to any thickness you like."—*Cor. Ironmonger.*

ENAMELS.—These are generally prepared by fusing silica, oxide of tin, and oxide of lead, and spreading the mixture over the surface of a sheet of copper, of gold, or of platinum. The objections to these enamels are their high cost, and the impossibility of giving them a perfectly flat surface. Mr. E. Duchemin has replaced them by the following compound: Arsenic, 30 parts by weight; saltpeter, 30; silica (fine sand), 90; litharge, 250. This is spread on plates of glass, care being taken that the kind of glass employed be not inferior in fusibility to the enamel.

Enameled glass prepared from the above may be written on, and the writing rendered indelible by simply heating the plate in a small open furnace or muffle.

THE LARGEST WIRE CABLE.—The largest wire rope cable in the country, being 5878 feet in length, has just been turned out at Roebling's mill, Trenton, New Jersey. The *Gazette* says it is to be raised on an inclined plane at Solomon's Gap, on the Lehigh and Susquehanna Railroad, to draw heavy coal trains over the mountains. In making wire rope, it used to require what is usually called a rope walk at least half a mile in length. But, by an invention of Mr. Roebling, the walk is dispensed with, and the rope is twisted in the middle.

Scientific Progress.

The Observations at Des Moines.

The special correspondent of the Chicago *Tribune* writes in addition to the notes made on the 7th: "The Litchfield party took valuable spectroscopic observations. Prof. Peters found the C line, indicating the presence of hydrogen, and the D line double, indicating sodium, in all the protuberances. He saw, also, in some, the blue line F for hydrogen, with green and other colored lines in the spectrum, the characters of which are not yet fixed. He thinks the results will be found to throw much light on the question of the sun's constitution. He took no spectrum of the corona. Rogers observed the protuberances with a micrometer. He found the extension of the lowest to vary from thirty-five to forty-one thousand miles from the disk of the moon, but this projected thirty-nine seconds beyond the solar disk, equal to eighteen thousand miles more, or a total of fifty-six thousand miles from the sun's surface. * * Professor Harkness corroborated the belief that the moon has no atmosphere, by the spectrum of a star taken at the instant of its being occulted by the moon. The spectrum disappears through its entire length at the same instant; whereas, if there were an atmosphere, it would cause the more refrangible rays of the spectrum to disappear later than those at the other end of the image.

Professor Harkness also obtained a spectrum from the corona, and found it continuous, with no absorption bands. This warrants the conclusion that the corona is due to the luminosity of solid substances, heated in an intense temperature. But the presence of one bright line in the spectrum indicates also the presence of a glowing gas. It is considered certain that the corona is self-luminous; but the fact that its light is strongly polarized, also points unerringly to the fact that a portion of its light is reflected. The more regular interior portion is probably the self-luminous photosphere, while the exterior, or irregular light is caused by the rays from the latter shooting up through the non-luminous atmosphere."

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—This body met at Salem on Wednesday, the 25th August. We find an incomplete report in the *Rail Road Register* of the 28th: Among the topics thus far discussed are "Sexes in Plants," "Vertebrate Remains in Nebraska," "Geology of the Maine Coast," "Early Stages of Brachiapods," and "The Ammonoosuc Gold Fields." On Thursday, L. H. Morgan, Esq., of Rochester, read a paper on Indian migrations. On Friday, Prof. E. B. Elliott read an essay on "Longevity of American Ships, with the Approximate Law of their Loss or Decay." Professors C. H. Hitchcock, Marsh, Verrill, Edwards, Murray, Hoyt, Turning, Vose, Hartt, Kerr, Perry, and many others took part in the meetings, either reading papers themselves, or commenting on those read by others. On Saturday the City Government took the Association off to Nahant, Minot's ledge lighthouse and the forts in the bay. On Monday the reading of papers was continued, on the Eclipse, on the Geology of Brazil, the New Gold Region of Venezuela, the Rocky Mountains, Maine and New Brunswick, and on various ethnological subjects, the Age of the Shell Heaps of our Coast, the race-relationships of the Hairy Men of Japan, etc. Mr. Pierce presided in one department, Mr. Agassiz in another."

TRICHINÆ IN ALL RAW MEAT.—At the late meeting of the American Association for the Advancement of Science, held in Salem, Mass.,—says the New York *Sun*:—"Prof. J. Baker Edwards stated some facts concerning trichinæ. It is generally known that they are minute worms, which find their way into the system by the means of diseased pork, eaten raw or insufficiently cooked. The female trichina, once in the stomach, there propagates immense quantities of worms, which make their way into the muscles and feed upon them, thus usually causing death. Sometimes, however, the worm dies, and they then assume a spiral form, and can be examined with a microscope, if powerful polarized light is used. If meat containing trichinæ is heated to 212 degrees, the worms will be killed, and the meat will not injure the consumer, if it be good in other respects. Professor Agassiz followed Prof. Baker. He said that he "hoped" the appetite of the community would not be disturbed by this scientific discussion, as such worms are present in all meats and even vegetables, and there is no danger if they be properly cooked."

POLARIZATION OF LIGHT.—Prof. Tyndall, in a recent lecture upon Light, at the Royal Institution, reported for the *Engineer*, said,—in regard to the polarization of light by double refraction,—that if a beam of light which has passed through one plate of tourmaline impinge upon a second plate, it will pass through both, if the axes of the two plates be parallel; but if they are perpendicular to each other then the light transmitted by the one is quenched by the other, darkness marking the space where the two plates are superposed. If the two axes be oblique to each other, a portion of the light will pass through both plates. For, in a manner similar to the resolution of forces in ordinary mechanics, an oblique vibration may be resolved into two, one parallel to the axis of the tourmaline, the other perpendicular to the axis. The latter component is quenched, but the former is transmitted. Hence if the axes of two plates of tourmaline be perpendicular to each other, a third plate of tourmaline introduced obliquely between them, or a plate of any other crystal, which acts in a manner similar to the tourmaline, will transmit a portion of the light; emergent from the first crystal. The plane of vibration of this light being oblique to the axis of the second crystal, a portion of the light will also pass through the latter. By the introduction, therefore, of a third crystal, with its axis oblique, we abolish in part the darkness of the space where the two rectangular plates are superposed.

THE ANCIENT INHABITANTS OF UTAH.—Professor Scott, of Kentucky, has for some time past been conducting explorations in Utah. His labors have been rewarded by the discovery, near Evanston, of a mound of extraordinary dimensions. The work of excavation was speedily accomplished, and a vault was laid bare eight feet long, three feet wide, and four feet deep, in which were the skeleton of a man, a cone-shaped earthen pot, an iron bracelet and two medicine stones, cigar-shaped and full of holes. On the right side of the skeleton was found a plate of pure silver, the size and shape of an artist's pallet. There is positive evidence that this vault is more than one thousand five hundred years old. The Professor is confident that this discovery, to be followed by others under the direction of the Smithsonian Institute, will establish the fact that the mound builders crossed the Missouri River, and passing over the plains of the Great West, found their way into Central America *via* the Gulf of California. *Springfield Republican, Aug. 7.*

AN AUTOMATIC TRANSIT INSTRUMENT.—The *Scientific Review* describes a piece of astronomical apparatus recently contrived by Mr. Kincaid: It consists of a plane mirror and a burning glass adjusted in such a manner that the moment the sun arrives at the meridian the solar rays are condensed by the lens upon a piece of thread, which burns and so releases a detent; motion is thereby given to the hands of a clock, bringing it to the correct local mean time. There is a supplementary arrangement by which if the thread should not ignite, in consequence of a passing cloud at the instant of the passing of the first limb, the subsequent ignition of the thread will not affect the clock.

MUSICAL INTERVALS.—MM. Cornu and Mercadier, who have been investigating the subject, have arrived at the conclusion that a single scale will not satisfy all conditions. They say that the intervals in a scale of melody are not the same as in a scale of harmony.

DR. HAYS.—A Philadelphia telegram of date Aug. 28th, says: The brig Helen, from Irighal, Greenland, reports that the Panther, with Hayes' Arctic exploring expedition, sailed from Irighal on July 27th, for Disco Island, North Greenland, where the Panther is going to Melville Bay. Previous to the arrival at Irighal the Panther had been at Julian, Shaab and Kaasmurst, where the expeditionists had been in the interior taking photographs.

DR. LIVINGSTONE.—A London dispatch of Sept. 4th, is as follows: "The discussion of the probable fate of Dr. Livingstone has been renewed in England. Captain Burton, the African traveler, believes that the Doctor is a prisoner in the town of Luscenla, the capital of the Kingdom of Cossehee, and an expedition to search for him is talked of."

Farming and Gardening.

Picking, Packing, and Ripening Fruits.

Picking and packing autumn fruits requires both care and judgment. Fruit should never be taken from the tree until it is fully ripe, and yet it should be plucked before it has begun to "mellow." This is especially the case with pears, the gathering and packing of which requires especial care. This fruit ought always to reach the market before it arrives at its best condition for being eaten. If so managed, it will give much better satisfaction to both shipper and dealer, and will be attended with the least possible loss to all parties.

In packing apples, clean boxes should always be employed—new ones are always preferable; never pick until ripe, and never mix fallen fruit with that taken direct from the tree; for, although such fruit on this coast is never wormy, as in the Atlantic States; still, as a whole, it is in some way imperfect. If marketed at all, it had better go in boxes by itself, and should never be kept for winter. The boxes should be packed as close as possible, and the top put on with a little pressure, to avoid any possibility of shaking during transportation. The top layer should be carefully put in with the stems of each apple *upward*, and the bottom with their stems *down*, to take the pressure.

Ripening Fruits.

It has been a subject of frequent remark that so little research has been made into the changes which apples, pears, etc., undergo after they have arrived at such a degree of maturity as to separate of themselves from the stems, or be in the condition most favorable for being plucked. The changes which take place in growing fruit, have been more thoroughly investigated, and have led to most interesting and important results. M. Cahours, a distinguished French pomologist, has quite definitely proven that ripe apples absorb oxygen, and give out carbonic acid; and the higher the temperature of the place where they are kept, the greater will be the amount of carbonic acid evolved.

He has further shown that some kinds of fruit "where the process of bletting, [decaying in spots, from being over ripe] takes place, and without which such fruit is not edible, it is only after vitality has ceased, that the requisite chemical changes for economical purposes takes place. Air then enters the cells, and acts first of all upon the sugar, causing alcoholic fermentation, with disengagement of carbonic acid and formation of alcohol, which, in its turn acts upon the acids of the fruits, thus forming a true ether, which produces the aroma of the fruit. The air then attacks the cell itself, which becomes colored yellow by the azotized membranes of which it is formed."

The fruit examined and experimented on, as above, was of the variety known as "Service," a fruit allied to the apple, which is sometimes eaten; but, as observed, only after incipient decomposition has taken place. The "medlar," a tree of the genus *mespilus*, also fit to eat only when in a state of incipient decay, was another upon which careful examinations were made. These varieties of fruit present peculiar advantages for such examination; and it would prove a most valuable work for horticulturists, if some competent chemist would turn his attention to this matter, and make a careful series of observations and examinations into the changes which other fruits undergo after they have been taken from the tree. There is no subject connected with pomology on which there is so great need of definite and reliable information.

To Remove Salt from Pork.—Take the pork from the brine, soak in sour milk for a few hours; then put it in cold water for a short time, and the pork will be very nicely freshened.

A Remarkable Floral Transmutation.

A correspondent of the *Rural New Yorker*, says that a rose bush, of the Oriental sweet briar species, which for twenty years has annually produced the common, single yellow rose, in the garden of A. P. Randall, of Palmyra, N. Y. has this year come out with a flaming red presentation! This, as is generally known, is a single rose and a very early as well as prolific bloomer; and and it was noticed as somewhat remarkable that this spring it passed over its usual period of blooming without any appearance of buds. When the season arrived for the general appearance of roses, this bush also put forth buds, with its neighbors in the garden, and finally developed a semi-double, slightly fragrant red rose, much larger in diameter than the single yellow rose it had formerly produced. It is said to have a general appearance quite unlike any other—evidently a new variety, retaining the characteristics of the wild stock from which it had sprung.

The bush has never been grafted or otherwise similarly interfered with. This singular bush is growing in the immediate vicinity of the Michigan, Bourdault and Queen of Prairie climbing roses. The Chicago briar appears unusually vigorous the present season.

Another very remarkable feature is the presentation of two very different classes of leaves—the one small, like those of the original yellow rose—the other the full size of the ordinary rose leaf. The latter are growing luxuriantly, while the smaller or first crop of leaves seem to be failing and dropping off.

The correspondent of the *Rural* justly regards the phenomena as a most novel one, and says it is a perfect puzzler to the hundreds of observers of the anomaly thereabouts. Its next year's appearance will be awaited with much curiosity.

The circumstance, substantially as given above, is attested as a veritable fact. If such, it must be regarded as one of the most remarkable cases of the sports of nature on record. The mystery of the change of a simple yellow to a double red rose, is probably beyond the power of human philosophy to solve.

Wild Oats a Pest in Oregon.

We have already spoken of wild oats as a pest in California, and it now appears that our Oregon neighbors are suffering from the same trouble. Whenever this wild variety gets in with the cultivated grains, it is sure to be pronounced a pest sooner or later—worse than sorrel.

As a hay crop, wild oats are excellent, almost or quite equal to timothy; but as grain, they are worthless, and their eradication from the soil is very difficult. They seem to spread in a most mysterious manner, springing up here and there where least expected. Mr. T. L. Davidson, in the Willamette *Farmer*, says they have got into the wheat fields of Oregon, and are very badly mixed with the cultivated oats. In speaking of their peculiarities, he adds:

"The grains upon the stalk do not ripen regularly, some ripening and falling off while others are still green. Each grain has a long sharp beard, arranged so that when it is wet by the rain or water it will move when placed upon your hand. It is said that there are fields of it in California that just after a rain seem like a mass of living worms working in the soil. These grains work deep into the soil, and keep coming up from year to year, and the farmer wonders, after summer-fallowing his field, why it is that he sometimes raises more wild oats than the grain sown. In fact, I have seen some fields so literally taken with them that the crop had to be made into hay.

The best plan to get rid of this pest is to sow the fields infested with timothy seed, and, after the grass is mown off in the fall, turn sheep upon the stubble to keep the wild oats eaten off that will keep coming up for several years. Fields may be summer-fallowed for two years, keeping sheep upon them to eat off the wild oats. In this manner, I think Oregon might soon raise wheat that the mills would not dock from two to four pounds per bushel."

A Hardy Breed of Sheep.—There is a race of sheep, found pure only in the mountains of Navarre, which live and feed mostly in the mountains of that portion of Spain. These sheep never descend to the plains except when their mountain pastures are covered with snow. They dislike warm weather; but care nothing for rain or storms of any kind, so long as they can find pasture. This breed of sheep is said to be very hardy, and to produce good and heavy fleeces. An effort is being made to introduce them into the state of Missouri. From the description given of their habits, it would seem that they ought to thrive well in all our Northern States, and perhaps in that portion of our western territory bordering on British Columbia. A full description of this breed may be found in the last report of the Missouri State Agricultural Reports, page 294.

Cabbage Pest in Carson Valley.—The Carson *Appeal* says that some (in that quarter) unknown insect is destroying all the cabbages in the Carson Valley. They not only attack young plants, but even those that have arrived nearly to maturity. The leaves are completely covered with the insects. Tobacco juice, salt water and ashes, have been tried in vain to kill them. They appear to abound most where there is the greatest amount of alkali in the soil. Let our friends try a strong solution of bitter aloes, as recommended in another column, and inform us of the result.

Extraordinary Growth of Oats.—The Russian River *Flag* has received a bunch of oats, the product of a single seed, numbering 117 straws, averaging 50 grains each, or a total of 5,850 fold increase. This extraordinary growth is attributed to the fact that they grew upon the spot where a straw pile had been burned, the potash from which must have been the chief fertilizing agent.

The Tokay Grape.—Ross Williams, of Santa Clara, has upon his grounds two acres of the Bragg Tokay grape, the only vines of this species in California, except a few which he has given to his friends. The Tokay is one of the most famous grapes of the Rhine. There are three varieties of these—the Bragg, the Common, and the Flaming Tokay.

Hops in San Jose.—Mr. Coe has one hundred Chinamen now engaged in picking hops. The hops are dried in a kiln in from eight to twelve hours, and much more properly than they can be cured in the open air.

California Wheat in New York.—Mr. J. H. Warwick, reports that on the 15th of August last there were but 460,000 bushels of wheat in New York, 325,000 of which was of California growth.

Grain Exports.—Only two per cent. of the total grain yield of the United States for 1868, was exported. The total yield of wheat and corn was 980,000,000 bushels—about 28 bushels per capita.

Broom Corn is a valuable crop in Sacramento county. This article, when baled and delivered in Sacramento, is worth from $80 to $140 per ton, according to quality.

Steam Threshers.—There are 56 steam threshers now at work in the Salinas Valley. They have about 75,000 acres of grain to thresh.

Degeneration of Oats.—The *Country Gentleman* says that all heavy oats that have been introduced have degenerated, after a few years, to the old standard.

To Keep Insects From Smoked Meat. While smoking meat with chips or sawdust put on the fire a few red peppers. The fumes will prevent all insects from attacking the meat.

A Pest Prescription.

Great annoyance is met with in the flower garden from the presence, in multitudinous numbers, of the green fly, the mealy bug, the thrip and kindred insects which infest garden, house and green-house plants. The editor of the London *Floricultural Cabinet* offers the following remedy for these pests, which he says he knows from experience, to be effectual:

Dissolve half an ounce of bitter aloes in a gallon of water. With this wash syringe the plants so as to wet them under as well as over the leaves. If the enemy be there, he will be destroyed; if he be not there, he will not come. Whether it be the nauseous bitter on the surface, or the smell, or both, we know not; but, so far as it has been tried, infected plants may be put all around one so treated, and there will be no sign of thrips, bugs, or aphides, even if the others be covered. It is the only thing that destroyed the thrip for us; and we believe that, while the bitter remains on the surface, nothing living will touch it. We feel great confidence that even snails and slugs will not meddle with it; and all we can say about its effects on caterpillars is that they have not yet attacked a plant so prepared, and that they have committed depredations on plants very close.

Eat Fruit.

If farmers would grow more fruit in their gardens, they would pay less doctor's bills, and live longer. Grapes and strawberries are two of the most healthy fruits that can be grown. Let any person who has any disease of the bowels eat a quart of strawberries per day, while they can be grown, and his ailment will disappear, unless of too long standing to be relieved by any remedy. A pound of grapes eaten daily in the fall will be found the best and cheapest medicine that can be taken for complaints pertaining to the stomach and digestive organs.

Any farmer who neglects to grow these fruits makes one of the greatest errors of his life. Do not think that one single vine will suffice, or a strawberry patch ten or twelve feet square. You should have, at least, a score of grape vines. In regard to your strawberry bed, you should be able to pick the fruit by the peck and half bushel, and all that your family cannot use fresh from the vines should be canned for use in the next winter and early spring when there are no green fruits to be obtained.

A new strawberry plantation should be set as often as every two years, as but two crops from the same plant can be grown to the best advantage. It is true you can grow a crop sometimes for five or six years, on the same plants, but it is better to remove the beds oftener, leaving the old ones to produce a crop until the new ones come into full bearing.

Elephant Plows.—Among the usual agricultural implements now manufactured in Great Britain, are a large number of elephant plows, which are forwarded by way of the Mediterranean, the Isthmus of Suez and the Red Sea and Indian Ocean, to the place of their destination. Every morning at sunrise the elephant takes his mahout by the waist-belt, places him on his back, and starts into the field. Two assistants guide the two plow handles, and as long as the sun is above the horizon the elephant marches along, throwing up a huge ridge behind him, the furrow having a breadth of four and a half feet and a depth of three.

Saw Dust Bedding for Horses.—An old stable keeper in England says he has never had a bad foot on his horses since he commenced the practice of bedding on a thick layer of sawdust. Pine sawdust he finds the best, oak the worst. This is in accordance with what has already been recommended in the Mining and Scientific Press.

The Borer.—W. H. Herrick, Oswego, N. Y., writes to the *Country Gentleman:* "For ten years I have fought the borer, but have now fairly beaten him by the application of *solid whale oil soap*, rubbed around the base of the trees. It is a sure thing."

Cooked Meal is nearly double the bulk of uncooked, yet quart for quart it goes as far. The difference is that much of the food is indigestible unless cooked.

Make the Cows Comfortable.—It pays to make a cow comfortable in as many respects as possible. Every hour she suffers from any cause, the milk account suffers correspondingly.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, September 11, 1869.

Financial.

A slightly easier feeling pervades the money market, and anticipations for the near future are brightening. Money is more generally distributed, which prevents the present massing of it in large sums for business requirements; but deposits are also being made in greater volume and with more frequency. Rates, however, remain unchanged from our last quotations, viz.: 1@1½ in bank, and 1¾@1½ outside, on the best collaterals; lower grade borrowers pay higher in proportion. The value of our breadstuff exports from July 1st to date approximates $3,000,000, and the money market will soon realize the full benefit of these shipments. Our Branch Mint recommenced operations on the 16th of August, and has been actively at work ever since, turning out $666,000 in a little over one week. The coinage, so far, has been in double eagles, and has been turned over to the bullion fund, to replace its proportion of the million and a half drawn from that fund against refined bullion. The gold deposits for August amounted to 103,038 ounces, and the silver to 28,182 ounces. Gold bars ranged from 800 to 860. The coinage for August of this year falls short of that for the same month of 1868 by $799,000; but the gold deposits exceed those for August of last year by 16,531 ounces. The difference in coinage is due to the short time the mint was in operation last month.

Bullion is in short supply, with a tolerably active demand. Gold bars are quotable at 860@870; silver bars, from par to ½ per cent. discount; currency bills on Atlantic cities pay 32½@33 per cent. premium on gold; coin sight drafts are negotiable at 1¼ per cent. premium; telegraphic transfers are made at 2@2½ per cent. premium, at which rates operations are very limited; sterling exchange, 48½d; commercial exchange, 49½d; Mexican dollars, 66¾ per cent. premium, nominal. Gold in New York, September 9th, 135¼; legal tenders in this city, 74@74¾.

The Agricultural State Fair, now in progress at Sacramento, has, so far, exceeded in point of general excellence, interest and attendance, any of its predecessors, and promises to be a financial as well as an agriculturally ethical success. Our Mechanics' Institute Fair will open on Tuesday next, September 14th. Neither pains nor expense will be spared to render it worthy of the city and coast whose various interests will be represented. It will afford our many Eastern visitors a fair opportunity to form a correct idea of the variety and character of our domestic products. The pavilion will be suitably apportioned to exhibitors, so as to give each a fair share of space.

City Stocks.

Sales of Miscellaneous Stocks have been meagre during the past week. A small lot of Spring Valley Water stock sold at $61 per share. The usual monthly ½ per cent. dividend is payable since the 10th inst.——The People's Insurance Company announce their usual dividend for the present month.——The Merchant's Mutual Marine Insurance Company disbursed their usual dividend for the present month.——At the close, we note sales of San Francisco Gas stock at $85, and California Steam Navigation Co. at 53½@53 per cent.

Mining Share Market.

The sales in the Stock Board during the past week show a large diminution as compared with previous weeks, though the offerings embraced more than the usual variety of stocks. Prices, for the most part, are less firm. The fall in "American," through manipulations for months past, has been hurtful to a number of dealers to a considerable extent. It will not be out of place to republish remarks concerning this stock, made in the COMMERCIAL HERALD of the 18th of May last, as follows: "A 'ring' has been manipulating this stock for some time, making fictitious sales, circulating reports, and in various ways 'hulling' it, with the intention of getting rid of it at high prices; but most of the sales made were from one of the ring to another, and it is now believed that very little has been got off on outsiders at high prices. The strain has been kept up for a long time, but the scheme has in a great measure failed, the parties being unable to accomplish what they attempted. The mine evidently has no merit, and there is no reason why it should not drop to its old price of about $2 per share."

The sales in the San Francisco Stock and Exchange Board during the month of August for the past five years have been as follows:

August, 1865	$4,292,618
August, 1866	1,284,452
August, 1867	7,538,420
August, 1868	11,612,001
August, 1869	5,060,777

From a published report of the Yellow Jacket company for the fiscal year ending June 30, 1869, we learn the following:

RECEIPTS.

Balance per last report	$49,249 13
Bullion	1,761,313 69
Ore sold	18,693 62
Morgan Mill profits	109,982 88
Assessment No. 9, overpaid	200 00
Assessment No. 11, overpaid	530 00
Hoisting ore for Kentuck Co	5,027 49
Miscellaneous	19,452 89
Total	$1,964,449 70
Balance at company's debit	251,007 89
Total	$2,215,457 59

DISBURSEMENTS.

Labor	$277,288 45
Mine supplies	56,922 21
Improvement, No. 1 central works	3,838 43
Improvement, No. 2 south hoisting works	30,534 28
Legal expenses	10,717 60
Expenses, revenue stamps, etc	7,937 88
Candles and oils	11,683 33
Powder and fuse	3,754 20
Wood	64,080 87
Iron and steel	4,542 93
Timber	65,321 82
Crushing ores, outside mills	514,311 86
Crushing ores, company's mills	332,600 64
Assay, discount on bars and Federal tax	31,687 23
Real estate for mining purposes	6,345 00
Interest	12,809 18
Salary of officers	17,167 00
Assay office	2,771 89
Working tailings, company's mills	34,583 79
Dividends, Nos. 14, 15, 16 and 17	720,000 00
Tramway joint account	1,869 87
Profit and loss Mexican mill, etc	3,399 82
Yolo Tunnel expenses	182 48
Total	$2,215,457 59

The assets and liabilities of the company are shown by the following statement:

ASSETS.

Mine supplies on hand	$10,282 50
Assessments Nos. 1 to 11	412 50
Sundry open ledger accounts	678 57
Total	$11,373 57
Balance at company's debit	251,007 89
Total	$262,381 46

LIABILITIES.

Sundry accounts	$11,822 26
Balance due Bank of California	250,559 20
Total	$262,381 46

CHOLLAR-POTOSI.—Was in the market to a large extent. During the month of August the bullion returns amounted to $149,397, against $162,650 in July, and $175,700 in June. For the week ending September 3d, 1,220 tons of ore were extracted and 1,396¼ sent to the reduction mills. The yield for the week came from the following localities: Blue Wing, 845; New Tunnel, 200; and Grass Valley Stope, 176 tons. The north end of the New Tunnel deposit is affording a better quality of ore than has yet been mined in that locality, the vein being nearly seven feet wide, and gives encouragement of increase as they follow it down. Blue Wing yielded less this week, but the assays show an increased quality of ore. A dividend of $2 per share is payable since the sixth instant.

HALE & NORCROSS—exhibits some improvement. The ore yield for the week ending Sept. 4th amounted to 1,026½ tons, 295 coming from the upper and 73¼ tons from the lower mine. During the same time they delivered 636¾ tons to custom mills, leaving on hand 1,685 tons.——SAVAGE has been in moderate request. The bullion yield for August aggregates $32,645, against $51,000 in July, and $89,500 in June.

GOLD HILL QUARTZ—shows a bullion product of $7,564 for the month of August, against $7,137 in July.——SIERRA NEVADA reports the receipts of bullion for August at $12,697, against $16,661 in July, and $19,381 in June. A dividend of fifty cents per share is payable on and after the 10th.——The yield from the EMPIRE for August foots up $12,812, against $13,579 in July, and $15,277 in June.

GOULD AND CURRY—met with small sales at a slight recession. During the month of August the bullion returns amounted to $35,220, against $36,217 in July. The ore extracted during the week ending Sept. 6th amounted to 225 tons. Prospecting in the Last Chance stope (upper chambers) exhibits more encouraging features than the report made last week. Forty feet below the middle tunnel, and thirty feet north, there are fair indications of a large deposit of ore. At the seventh station the drift south has been run twelve feet and the one north sixteen feet. The material encountered is clay, mixed with porphyry. The ore reduced in August yielded $32 92 to the ton.——AMADON (Cal.) shows a bullion yield of $48,241 for August. A dividend of $6 per share was paid on the 7th inst.——EUREKA (Cal.) disbursed a dividend of $6 per share on the 8th.

The OPHIR drift has been extended a distance of 677 feet, the rock continuing as hard as mentioned heretofore.——CHLORIDE CONSOLIDATED (W. P.) reports a bullion yield of $59,000 for the month of August.

The White Pine *News* of Sept. 4th, has the following opening to its mining review for that week:

The improvement in mining affairs noticed last week still continues. The number of hands employed is increased every week, resulting in a proportionate increase of the quantity of ore sent to mill. But for the lack of milling facilities, the quantity shipped would be doubled, as several of our best mines—the California, Aurora South, Evening Star Consolidated, and Pogonip and Othello—are sending no ore to mill, and have large quantities accumulated on their dumps. These mines and several others are employing but a limited number of men at present, intending to increase their force largely as soon as they have suitable facilities for reducing their ores. The first three mines above mentioned belong to the Stanfords, and have two or three thousand tons on their dumps, awaiting the completion of the Stanford Mill, which will be running in about two weeks with thirty stamps. The Pogonip and Othello belonging to the Lows, and several other mines, are awaiting better and cheaper facilities for milling, yet our principal mills have engagements which will keep them busy until Winter sets in, and there is little prospect of any material reduction in the price of crushing at present. A considerable reduction was expected to follow the reduction in the rate of wages, but we do not see how this is to be realized until our milling facilities are materially increased. Should the Winter hold off late, the number of stamps in operation in the District will probably be increased to about 200, which will be kept busy all Winter, turning out bullion at a rate of at least $100,000 per week. Much, however, remains to be done to get ready for Winter, as few, if any, of our mines are prepared for working in stormy weather. The working shafts are yet to be housed in—a work of necessity that prudent men will commence within the next thirty days.

A development of considerable importance has been brought into notice during the past week, on the eastern slope of Treasure Hill. The Tom Paine mine, recently purchased by a Chicago company for $20,000, has been sufficiently opened to develop a well defined east and west ledge, over twelve feet in width, between two as perfect walls as any found in the District. The ore is of an unusually high grade, showing largely of born silver and pure chlorides, and nearly all the vein in the present works being composed of milling ore. The mine is fully 300 feet below the crest of the bluff, and about midway between the Eberhardt and Hidden Treasure mines, being, in fact, directly opposite and on a line with the Earl mine, which it resembles very much in character.

Our Office.

The office of the MINING AND SCIENTIFIC PRESS is located in the second story at No. 414 *Clay* street, north side, just below Sansomo. Here we have spacious accommodations, with our patent rooms, editorial room, counting room, and newspaper printing office,—all conveniently arranged and connected, and our facilities for dispatching business correctly and economically, better than ever before. Don't forget the number—414 Clay street, below Sansomo.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alleghany Cons., Sierra co., Aug. 6, 50c	Sept. 7	Sept 23*
Black Jacket, White Pine, Aug. 18, 10c	Sept. 17	Oct. 21
Bucklin, White Pine, July 14, 5c	Aug. 20	Sept. 30
Bullion, Storey co., Nev., Aug. 21, $10	Pay. Immediately	
Chipiona, Sonora, Mex., July 26, $2.50	Aug. 26	Sept. 11
Cordillera, Mexico, July 23, $1	Aug. 24	Sept. 8*
Crown Point, Storey co, Nev., Aug. 6, $5	Sept. 9	Sept. 23
Cala. Slate, Calaveras co., Sept. 7, $1	Oct 7	Oct. 20
Cherokee Flat, Butte co., Sept. 3 $5	Oct 6	Oct. 21
Clancy, Lyon co., Nev., Aug. 5, $1	Sept. 6	Sept. 26
Eclipse Cons., White Pine, Aug. 11, 50c	Sept 16	Oct. 8
Etna, White Pine, Aug. 27, 15c	Sept. 30	Oct 20
Evening Star No. 1 White Pine, Aug. 25, 10c	Sept 23	Oct 15*
French, White Pine, July 19, 5c	Aug. 24	Sept. 13*
Featherstone, White Pine, Aug. 31, 30c	Oct 7	Oct. 26
Glenwood, El Dorado co., Aug. 2, 20c	Sept. 8	Sept. 28*
Hopo Gravel, Nevada co, Aug. 8, $1	Sept. 13	Oct. 4
Horner, White Pine, July 24, 10c	Sept. 8	Sept 30*
Iron, White Pine, Jul 14, 10c	Aug. 9	Sept 16
Julia, Storey co., Nev., Aug. 4, 75c	Sept. 7	Sept. 25
Kincaid, Tuolumne co., Aug. 4, $2 50	Sept. 8	Sept. 25*
Kentuck, Storey co., Nev., Aug. 5, $10	Sept, 6	Sept. 25
La Plata, Sonora, Mex., July 8, 25c	Sept 13	Oct. 1
Lyon M. & M., El Dorado co., July 21, $2.	Aug. 30	Sept. 20*
Mammoth, White Pine, July 16, 50c	Aug. 24	Sept. 13
Maxwell, Amador co., Aug. 14, $1	Sept. 16	Oct 21
Mazepna, White Pine, Aug. 30, 10c	Aug. 5	Sept. 17
Mammoth Cave, White Pine, July 12, 10c	Aug. 28	Sept. 23
Morning Star, Alpine co., July 21, $1.50	Aug. 31	Sept. 16*
Marlborough, White Pine, July 19, 5c	Aug. 24	Sept 13*
North Bloomfield, Nevada co., Aug. 6, $3	Sept. 9	Sept. 25
New Era, Amador co., July 13 $35	Sole Sept. 20	
Ophir, Storey co, Nev., July 23, $3	Aug 25	Sept. 16
Orig. Hid. Treasure, White Pine, Aug. 8, $2	Oct. 4	Oct 21
Pacific Cons., White Pine, July 30, 10c	Sept. 8	Sept. 28
Pocotillo, White Pine, Aug. 2, $2	Sept. 6	Sept 27
Phœnix, White Pine, July 12, 15c	Aug. 12	Sept. 30
Rathburn, White Pine, Aug. 27, 50c	Oct. 1	Oct. 21
S. R. M. Co., Humboldt, Nev., July 27, 20c	Sept. 13	Oct. 1
Silver Wave, White Pine, Aug. 23, 20c	Sept. 28	Oct. 20*
San Mateo, Tin, San Bernardino co., Aug. 20, $2	Oct 4	Oct 18
Segregated Belcher, Storey co., Aug. 5, $1	Sept. 9	Sept. 29
Senator, Storey co., Nev, Sept 6, 5c	Oct. 18	Nov. 8
Sierra, Douglass co., Nev., Aug. 20, $2	Sept. 23	Oct. 14
Silver Sprout, Inyo co., July 27, 50c	Aug. 31	Sept 20
Taylor, El Dorado co., Aug. 25, 20c	Oct. 4	Oct. 21*
Tecumseh, Calaveras co, July 22, $7 50	Aug. 24	Sept. 15
Treasure Trove, White Pine, July 27, 20c	Aug. 30	Sept. 18
Virginia No. 2 White Pine, July 21, 25c	Aug. 26	Sept. 14
Wells, White Pine, Aug. 10, 30c	Sept 17	Oct. 7*
West California, White Pine, July 10, 10c	Aug. 17	Sept. 25
Yellow Jacket, Storey co	July 19, $10	Aug. 18	Sept. 17

MEETINGS TO BE HELD.

Cosala, Mexico	Annual Meeting, Sept. 20
Fresno, Quicksilver	Annual Meeting, Sept. 15
Mineral City, White Pine, Aug. 24, 50c	Oct. 7—Oct. 22
New Era, Amador co	Annual Meeting, Sept. 13
Nevada, Nevada co	Annual meeting, Sept. 20
Oriental	Annual Meeting, Sept. 20
Wasiello, White Pine	Annual Meeting, Sept. 17
White Pine, White Pine co	Meeting, Sept. 15

LATEST DIVIDEND.

Amador Co., div. $3 per share	Payable August 7, 1869
Alpha Cons., Storey co., Nev., div. $2	Pay. June 15, 1868
Bacon, Storey co., Nev., div	Payable June 10, 1868
Coney, preferred Stock, div. 1½ per cent	May 15, 1869
Crown Point, dividend, $7.50	Payable Sept. 12, 1868
Chollar-Potosi, div., $2	Payable August 6, 1869
Eureka, div. $5	Payable August 10, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Golden Chariot, Idaho, div. $3	Pay. June 15, 1869
Golden Rule, Tuolumne co, div $3 sh	Pay. Aug. 28, 1869
Hale & Norcross, div. $6	Payable July 10, 1869
Imperial, Storey co., Nev., div	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 1, 1869
Keystone, Sierra co., div., $32	Payable May 5, 1869
Kentuck, div., $20 per share	Payable Jan. 15, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $3	Payable March 2, 1869
Pacific Unassessable, div	Payable June 18, 1868
Sand Spring Salt, dividend $1	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec. 19, 1868
Savage, Virginia, Nev, dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. August 10, 1869
Virginia & G. H. Water Co., Dividend, payable April 16, 1869	
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, September 10, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5s, 20s, 1862	87	89
Legal Tender Notes	74	74¾
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & int.	
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par & int.	
San Francisco City and Co. Sch'l Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	85	90
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	53	54
Slate Telegraph Co	25	—
Spring Valley Water Co	61	—
GAS COMPANIES.		
San Francisco Gas Co	84½	—
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	69
Central Railroad	56	—
North Beach and Mission Railroad	—	68½
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	94	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	86	91
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	150	150
MINING STOCKS—WASHOE DISTRICT.		
Alpha	14	14½
Baltimore American	—	—
Belcher	16½	17½
Bullion, G. H	8½	9
Crown Point	30	30½
Cole (Va.)	—	—
Confidence	—	—
Consolidated Virginia	—	—
Chollar-Potosi	14¾	15
Daney	22	24½
Exchequer	5	10
Empire Mill and Mining Co	25	35
Gould & Curry	—	—
Gold Hill Quartz	—	—
Hale & Norcross	—	—
Imperial	—	—
Julia	—	—
Justice and Independent	—	—
Kentuck	505	—
Lady Bryan	6	—
American	2¾	—
Occidental	15	16
Ophir	15½	16
Overman	72	74
Segregated Belcher	10	—
Savage	49	—
Sierra Nevada	7¾	8¼
Union	—	—
United States	—	—
Yellow Jacket	47	—
MISCELLANEOUS MINING STOCKS.		
Amador (California)	290	300
Aurora, White Pine	6	10
Eureka, (California)	210	—
Golden Chariot (Idaho)	30	—
Silver Cord (Idaho)	1	—
Golden Rule, California	—	—
Pocotillo, White Pine	1½	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, September 10, 1869.

Flour, Extra, ₱ bbl	$5 25	@	$6 75
Do. Superfine	4 00	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 65	@	1 65
Oats, ₱ 100 lbs	1 65	@	1 85
Barley, ₱ 100 lbs	90	@	1 85
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	1 00
Hay, ₱ ton	8 00	@	13 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14½	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	20
Do. Rio	—	@	19
Tea, Japan, ₱ lb	75	@	90
Rice	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	5
Coal Oil, ₱ gallon	43	@	45
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	40	@	60
Isthmus Butter, ₱ lb	30	@	35
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	60	@	65
Lard, ₱ lb	15	@	17
Ham and Bacon, ₱ lb	15	@	18
Shoulders, ₱ lb	—	@	10

Retail Prices.

Butter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	30	@	40
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	70	@	75
Lard, ₱ lb	18	@	20
Hams and Bacon, ₱ lb	20	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1½	@	2
Potatoes, Sweet, ₱ lb	1	@	2
Tomatoes, ₱ lb	8	@	—
Onions, ₱ lb	3	@	—
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	—
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O	10	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, September 10, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1¼c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2¼c ₱ lb.

Scotch and English Pig Iron ₱ ton	$35 00	@	$36 00
White Pig ₱ ton	34 00	@	35 00
Refined Bar, bad assortment ₱ lb	03	@	—
Refined Bar, good assortment, ₱ lb	04	@	—
Boiler, No. 1 to 4	04¾	@	—
Plate, No. 5 to 9	—	@	04½
Sheet, No. 10 to 13	04¼	@	5
Sheet, No. 14 to 20	05	@	5½
Sheet, No. 24 to 27	05½	@	06

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb

Sheathing, ₱ lb	—	@	26
Sheathing, Yellow	20	@	21
Sheathing, Old Yellow	10	@	11
Composition Nails	21	@	22
Composition Bolts	21	@	22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	—
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	—	@	35

STEEL.—English Cast Steel, ₱ lb | — | @ | 15

QUICKSILVER.—₱ lb | 65 | @ | 69

LEAD.—Pig, ₱ lb | 7½ | @ | 8

Sheet	10	@	—
Pipe	11	@	—
Bar	—	@	9
ZINC—Sheet, ₱ lb	10½	@	11
BORAX.—California, ₱ lb	40	@	50

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Sept. 10, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.					Per ton
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	20 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	35 20	30 " "	75 60
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

These prices, corrected by W. T. Atwood, we believe will be found substantially correct, and can be realized at this date.

THE COLORS OF THE OPAL.—The vivid flashes of crimson, green, and blue light emitted by the opal, proceed from planes inside the stone, at different distances from the surface, of different sizes and at all angles. Sometimes these planes overlap each other; so that two colors are alternately visible on slight variation of the angle.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

AMADOR COUNTY.

The Summit Mine.—*Ledger*, Sept. 4th: They are now sinking the south shaft, and the prospect is splendid. Eight hundred tons of rock have been milled, and paid an average of $25 to the ton.

Found it Again.—The Wolverine Co., at Sutter Creek, after sinking 200 ft. deeper, have struck their lode again, and now have a vein from 16 to 20 feet wide.

BUTTE COUNTY.

Mining Operations.—Oroville *Record*, Aug. 28th: The flume of White, Schwein and others, is approaching completion, and will soon be carrying the bluff to the river with the force and power of 500 inches of water on a fair grade. We notice that the Forsyth boys are running a tunnel from the river into the bluff. Mr. Hewitt is regularly cleaning up $3,000 to $4,000 per month.

CALAVERAS COUNTY.

Unprecedented Yield of Gold.—*Chronicle*, Sept. 4th: Twenty-one tons of rock from the claim of Lewis & Co., in Wet Gulch, near Independence, yielded $4,484—an average of $213.52 per ton. The quartz was crushed in Schmidt's mill at West Point. The lead is wide, well defined, and has every appearance of being permanent. Lewis & Co. are constantly taking out quartz as good as that, and have now 40 tons at the mill.

Railroad Flat.—Cor. of above: A circuit of five miles around Railroad will show the richest district in the State. The hill on the west side of Wet Gulch in my opinion deserves the name of Treasure Hill. A quartz mill is needed here. The opportunity for investment will not be long overlooked by capitalists. The claim of Gass & Co. produces rock that yields about $100 per ton, with all the indications of a permanent lead.

INYO COUNTY.

Cerro Gordo.—Letter to the *Territorial Enterprise* of Sept. 3d: In the Freiberg mine, a tunnel has been run 450 feet, which has cut three distinct veins of ore, the main one being 20 ft. wide. Large quantities of ore are being taken out which yields from $60 to $200 per ton in silver.

The Ignacio mine, which was lately sold to a San Franciscan for $20,000, is the richest one in the district, that is, the richest ore has been taken from this mine, some specimens of pure native silver having been found, though the ore generally contains some galena and much copper, sulphur and antimony. The highest assay obtained from rock in this mine is $984. What is termed the first-class ore yields from $500 to $800 per ton in silver. A shaft is down about 80 feet, and the vein is 28 feet wide.

The Frout, Belmont and San Lucas, all present indications of being good mines; all have yielded good ore, and in general features are much like the first two, though much less developed. As before stated, there are many more prospect holes and claims which are yet in an indefinite condition; all such we pass without mention. Lack of furnaces or smelting works is the greatest drawback in the district. Practically, there is but one furnace in Cerro Gordo, though several small affairs have occasional "fits" of putting on a business-like face. Belshaw's smelting works began operations less than a year since. These works have coined money for the owners, as they had full control and paid their own price for ores. When in full blast, this furnace turns out 70 or 80 bars of bullion every 24 hours. The bars vary from $250 to $600 per ton in silver. Since the first of June these works have turned out about 45 tons of bullion, the highest assay of which is 275 ounces per ton.

Water is a scarce article, and the lack of it has compelled even the one furnace mentioned to suspend operations a large portion of the time. Hence the talk of moving the ores to some point in the valley below to be worked. Two furnaces have already been erected, but both are unpropitiously located. One of them—the Swansea Smelting Works—is just below Cerro Gordo, near the lake shore. It is the property of a New York Company, and was planned after the manner of eastern companies, without any certainty of water for the works, or any definite plan for obtaining ore. So much for furnaces, with the suggestion that a good furnace, properly located, seems to be the best investment for capital in this district.

NEVADA COUNTY.

Bowery Mine.—Grass Valley *National*, Sept. 1st: The owners of this mine, near Deadman's Flat, are making arrangements to increase their facilities for hoisting. They expect to take out one hundred tons of ore for crushing, within the next month. The last two crushings paid well.

Meadow Lake.—*Transcript*, Sept. 2d: The furnace, built after the fashion of a lime kiln, for the purpose of roasting rock to be treated by the Burns' process, is completed and was to have been charged on Wednesday. Two pans have been put in the California mill for working the process.

Eagleson & Co. have struck a ledge, the rock from which assays $91.50 in gold, and $4.50 in silver. The rock is to be tested by the new process.

Union Hill Mine.—Grass Valley *Union*, 7th: For the last month the Union Hill mine has yielded about $12,300 worth of the precious metal. The profit is about $6,000. The shaft is down 260 feet; drifts are being run at the bottom of it, while sinking is still to go on.

Empire.—The Empire Co. are taking out rock from the Rush & Laton ground, south of the main shaft. The ledge is from eighteen inches to two feet in thickness, and shows well in sulphurets. The new incline on the Rush & Laton ground, is down 200 feet, and has separate hoisting works to raise the rock through it. In the main works of the mine, from the 800 foot level, splendid specimen rock was being taken on Saturday.

Kansas.—*Gazette*, 7th: This Co., who have been for some months prospecting for the Nebraska lead, and struck rich gravel a week or two ago, are removing their machinery to a convenient point for sinking a permanent shaft. The old channel was found further on the north side of the ridge than was anticipated.

PLACER COUNTY.

Oak Swamp Ledge.—*Stars and Stripes*, Sept. 2d: This claim, near Ophir, owned by J. Shindler and Pete Emig is panning out finely. One day last week the owners struck a small pocket, from which they took forty-seven ounces of gold in two days.

Good Yield.—Last Thursday, Messrs. Puffer & Sweezey, owners of a quartz ledge near Newcastle, had seventy tons of rock from their claim crushed at Schnabel's mill, which paid at the rate of $36 per ton, or $2,500.

PLUMAS COUNTY.

Black Hawk.—Quincy *National*, Aug. 28th: Turner, Rice & Co., have finished cleaning up, and have made from ten to twelve dollars per day to the hand for the season's work. They have been working four or five men most of the time. They have good ground enough to last for years.

Sawpit.—This is the liveliest mining camp in the county. Most of the tunnel companies are getting out pay-dirt, and the hydraulic claims in that vicinity are being put in readiness for the coming water season.

Claremont Hill.—Siler & Myers are getting out timbers in readiness for winter. This Co. has been at work eight years. Their tunnel is nearly 1,000 feet in length. They are certain that they are on an extension of the "Blue Lead," and that another winter's work will put them into "pay gravel." Several other claims have been located near them, and the companies are waiting for developments.

Rich Quartz.—Dr. Coleman, of Black Hawk, has discovered a quartz ledge, in his claims. Specimens from it show a large amount of free gold, and good wages can be made crushing the quartz in a hand mortar. The ledge is a large one.

Mill Creek.—Several companies are getting good pay, and have flattering prospects. Baker & Co. are averaging five or six dollars per day to the hand, and last week picked up a nugget weighing $75.

SAN DIEGO COUNTY.

The *Union* publishes an assay certificate by John Hewston in reference to rock sent to San Francisco by some prospectors in that county. The value of the ore is given at $295 per ton of 2,000 lbs. in silver, with a trace of gold.

SISKIYOU COUNTY.

Klamath River.—Yreka *Journal*, Aug. 27th: This district is beginning to "pan out" again after the old style. F. Riley & Co., who have been for the last fifteen months running a tunnel under the river without seeing the "color," have at last struck the channel and the gold in flattering prospects. They find the "sink" at the point at which they strike it as rich as at any point on the river. One pan of earth shown us by Riley produced some six dollars, with every reason to expect as good for a long distance. The gold is water deposits in cement.

TUOLUMNE COUNTY.

Confidence Mine.—Sonora *Democrat*, Sep. 4th: The new 20-stamp mill is pronounced by competent judges the most complete mill in the county. It is now running, and from all indications its first "clean up" will be a handsome one. About 160 tons of splendid rock are now lying at the mill ready for crushing.

Arizona.

Montgomery Mine.—Prescott *Miner*, Aug. 2d: Work has ceased for the present, there being an insufficiency of water to run the arastras, and the Indians having burned the cabin at the mine. We learn that Mr. Genung, the owner, intends, also, to commence work on another lode, the Sutler. To this end he was engaged in negotiating with Allen Cullumber, of Walnut Grove, for the use of his power, wheels, etc, The Sutler is in the Walnut Grove district, and prospects well.

From Wickenburg.—Capt. Hargrave and Judge Rush arrived Wednesday from Wickenburg, and report business tolerable lively; both quartz mills running.

Big Rebel.—Parties recently from Walnut Grove, inform us that T. Lambertson was crushing quartz from the Big Rebel lode.

The Sterling.—The Sterling mill was to have been started this morning, to try the new stamps. It rained heavily a day or two ago, and we learn that there is now plenty of water for milling purposes.

Prospectors Back.—The prospecting party, under Dickason, got back early this week. They prospected in the Black Mountains, and found little more than the color.

Bigelow & Harris moved their "traps" from their mining claims on Lower Lynx Creek, to town, one day this week, having become tired waiting for water.

Chase Mine.—A. O. Noyes worked recently by Paul & Wood process, a small quantity of Chaso tailings, and the result was pleasing. Another test will soon be made. We cannot say more now, than that it is thought success will crown Mr. Noyes' efforts to work our sulphurets.

A Prescott letter to the Petaluma *Argus* says: White Piners are beginning to come in, with the intention of prospecting; and that one of them told the writer that he had found rock which closely resembled that of Treasure Hill.

Colorado.

Winnebago Mill.—*Herald*, Aug. 25th: George Barrett has started up this mill on custom ore from the Gunnel and Mammoth lodes. He is hoisting the water at the rate of 40 gallons per minute.

Sterling.—Hartwell & Eagan are working the Sterling lode, at Georgetown. In sinking the discovery shaft they took out over $1,000 worth of ore. They have also a shaft 50 feet west, which shows a vein of four inches of $1,000 ore, besides an 18-inch streak of second quality.

Nelson Plumb is erecting a 15-stamp mill on Quartz Hill, for custom work. He has a thousand cords of ore ready to run, that will yield $30 or $40 per cord.

New Boston Lode—Griffith District. A shaft has been sunk 170 feet, and a cross tunnel driven from below, which cuts the vein at the bottom. The vein, as far as developed, shows a continuous sheet of mineral which assays from $39 to $80, and is large enough to keep all the mills in the county supplied.

Gold Hill District.—*Register*, Aug. 26th: Some 20 men are taking out ore enough to keep one 10-stamp mill and two arastras in operation. Blake & Tucker are cleaning out the discovery shaft on the old Hope lode. The last taken out, at a depth of 50 feet, run eight ounces per cord, and the parties working it say that they left a good vein of ore in the bottom. A little work has been done on the Williams lode with flattering results. A small lot of ore from Brierly's claim yielded 12½ ounces per cord. A sample of the iron gave a result of 25 ounces gold and 60 ounces silver per ton,—a coin value of $594.75. The Hoosier lode is being worked in one place only—No. 5 north—where they have a wide vein of rich ore. The mill is undergoing alterations in the machinery, but will be in operation again this week. Payson Gleason's 6-stamp mill, on Four-Mile, is about ready to start up.

Snake River.—*Register*, 26th: Mr. Packard, from Montezuma, reports mining matters in a flourishing condition. The St. Lawrence S. M. Co. have men getting out timbers for a building to be occupied by two reverberatory furnaces, having a capacity of eight tons per day. The tunnel is in 50 feet. The vein is three feet thick. A test of one-half ton of the ore gave at the rate of $106 per ton. The Napoleon lode, below the Silver Wing, opened with a tunnel 50 feet long, shows a solid ore-vein of galena eight inches thick. The crevice is five feet between walls. The ore run, gave at the rate of $113 per ton. Work is stopped on the Belmont lode, to give an opportunity for rebuilding. On the Haucock lode, the shaft is 40 feet deep. Belmont No. 2 has a tunnel 160 feet long; crevice, four feet. The richest streak is nine inches wide, and assays 572 ounces of silver per ton. The Wilson lode has a tunnel 50 feet long. The Democrat promises well. Assays show $125, $165, and $175 coin per ton in silver. One thousand four hundred pounds run by roasting and amalgamation showed $65 coin per ton in silver. The Stephen's lode is being worked by Professor Dibbin. Two tunnels, one 30 feet, the other 40 feet in length, and about 75 feet apart, are run in on the vein five feet between walls. The John T. Harris lode has a tunnel 94 feet long. Twenty-seven fathoms have been backstoped. The opening is 25 feet high and 44 feet long. The crevice is four feet. One-half of all that is taken out is first-class ore. About 100 tons of first-class ore are piled up. On a line, 750 feet below, is the International lode. The tunnel is 270 feet long on the vein, and three feet between walls. One-half of the entire width is first-class ore.

James Creek District.—Denver *News*, Sept. 1st: We have received a handsome specimen of ore from the Wanlan lode, James Creek district, Boulder County, owned by Mr. Mallory and others. The specimen shows free gold with pyrites.

The Wilson steam stamp mill at Black Hawk, is running day and night in the most satisfactory manner.

The *Miner* states that L. Huepeden & Co. have just finished the reduction of 73 tons of second-class Equator ore, that gave a total assay of $10,514.92 coin, the average assay per ton being 111.04 ounces; coin value, $144.04.

Idaho.

Wagontown Placers.—Owyhee *Avalanche*, Aug. 28th: There are several men already on the ground. We washed several pans of dirt and found from one to three cents in each. Water is scarce at this season; will be abundant about April 1st. Indications are good for this to be a thrifty camp next season. We would not be surprised to see 300 miners working on the creek before the middle of next summer.

Flint District.—*Wave*, Sept. 3d: The Twilight mine is being worked by a joint-stock company. They have a road built from the mine to Black's mill, and are taking out ore. They intend to crush about a hundred tons as a trial, and if they like it will continue.

Loon Creek Diggings.—*World*, Aug. 26th: Jacob Romer, just in from Oro Grande, says this will prove one of the richest and most extensive districts yet discovered. The best claims had been taken up by the first crowd who got in there from Lemhi and Montana. Several quartz veins have been taken up, and parties are daily prospecting for rich strikes in that line of mining. Mr. Romer estimates the number there when he left at 600, and more were daily coming in. The trail from Leesburg is very difficult and dangerous. A dozen pack animals had been precipitated from high, sharp points on the mountain side down into ravines, and killed, and their cargoes lost. Goods will have to be packed in from this direction. Jack Kennaly has a very rich claim. One man had panned out $117 in a single day; another had obtained nearly $20 from a single pan of dirt taken from a depth of five feet. The news produced another excitement here, and another stampede has been the consequence.

Judge Beatty writes to the Boise City *Chronicle*, from Leesburg, that everybody had gone to Loon Creek, and he should himself start at once. He says the prospects are from five cents to $18 per pan; and that one piece weighing $9 was reported. Another Leesburg letter to the Helena *Gazette* is equally favorable.

The *World* mentions among those who have left Idaho City for the new diggings, Joe. A. Luckett, Rube Peyton, Tom. Britten, E. D. Holbrook, John Gorman, John Burns, G. Tickner, and John Claresy.

Montana.

Brown's Gulch.—*Republican*, Aug. 27th: We were yesterday shown several beautiful silver bricks, made by Chas. Yeater, from ore in the Black lode, Brown's gulch. The ore was first run through a small arastra, then smelted in an ordinary fire, by which process both the silver and gold are saved.

Conner's Mill will commence running some time next month.

WIGWAM GULCH.—Mr. Frank Morgan, exhibited to-day a specimen of gold which equals that of Alder in richness. Harbert & Co., own 3,000 feet, 500 of which is flumed. Shellebarger & Co., have 2,000 ft. and have just commenced to build their flume. Manning, Wilbur & Co., own 3,500 feet. They have commenced fluming, and average $6 per day to the man on the rim. They have two feet of shoveling before reaching the channel. Our city company, composed of Dr. L. Daems, Chief Justice Warren, Dr. Mussigbrodt and others, own 5,000 feet of ground. They have already completed 450 feet of fluming. Less than 200 feet more will reach bed-rock, when they will commence taking out gold.

STRUCK IT RICH.—Helena *Gazette*, 26th: The company who have been running the lower drain on Trout creek struck it rich a few days ago. The drain is 100 feet deep, and cost the company two years hard labor, and over $25,000. As high as $500 have been offered for claims, we are informed, and refused.

DEER LODGE.—The *Independent* says: The James Stuart mill, at Phillipsburg, is crushing ore from the Hope ledge....French gulch is turning out well. Mr. Campbell will soon bring in another ditch.

PETERSON GULCH.—*New North-West*, 27th: This recent discovery, six or seven miles from town, has some 45 or 50 claims staked, and fair prospects are being obtained. Owing to there being no water at present, but few claims are being opened. C. B. Adriance & Co., have not struck the main channel, but in nearly every shaft have seen "color."

A GOOD INVESTMENT.—There is in the vicinity of Pioneer City at least five square miles of rich ground. Within the five miles are Gold Creek, Willow Creek, Pike's Peak, and Dry Gulches, Pilgrim, Pioneer and other bars, known to contain good pay. The ditches now built are inadequate to furnish the amount of water that is needed. A ditch can be built from Race Track Creek—25 miles or less—for $80,000 to $100,000. The greater portion of it can be plowed, and there would be less than 200 yards of fluming. The ditch would pay 25 to 40 per cent. per annum. Who is the man that will build it?

Nevada.

COPE DISTRICT.

GOOD QIELD.—Elko *Independent*, Sept. 4th: Mr. T. F. Fuller, of Cope District, shipped to Dall's mill at Washoe, two weeks ago, 7,200 lbs. of ore from the Mammoth and Grant ledges, and had it all worked together. The yield was at the rate of $256 per ton. The cost of hauling the ore to this place from the mines was $40 per ton; from here to Reno $9.50 per ton; and from Reno to the mill $10; making $59.50; to which must be added $50 for working, making a total cost of $109.50 per ton for working the ore, which of itself would be a handsome yield if worked at the mine.

ORE FROM COPE.—Sixty-one sacks of ore, from the Argenta mine in Cope, weighing 6,174 lbs., for shipment below, arrived in town on Thursday. John Enright, expressman, came in yesterday, and brought with him some very fine specimens of silver ore. One piece from the Mountain City, was literally covered with horn silver.

INDEPENDENCE MINES.—The placer mines in Independence Valley, near the northern end of the State, have been sold to a company of Chinese who are now building a road from Carlin. The mines are extensive, but do not pay large wages.

QUARTZ MILL FOR ELKO.—Thos. Bronn, now in the assaying business in this town, has made arrangements for the erection of a quartz mill as soon as the material can be got on the ground.

HUMBOLDT.

UNIONVILLE.—Correspondent Elko *Independent*, Sept. 1st: The Arizona continues to give out rich ores, and mining both on the extension and the original is better and richer than ever. About one-half the quantity now mined is worth over $400 per ton, and is selected for shipment to San Francisco.

The Seminole Co. are still prosecuting work on their tunnel, which is now in 540 feet. From calculations based on recent survey, they expect to cut the first ledge of the series within 25 feet. The tunnel is worked by contract.

The Alpha mine, four miles from Unionville, has been sold to an English company. The vein has been traced two miles, and several companies owning locations are developing them. Sacramento District is attracting attention. The Rochester Co. is prosecuting work on its claims, with encouraging prospects. Work is progressing on the Tallulah, in Dun Glen, and operations will be commenced on the Monroe after the 15th inst.; at which time the interest of the Humboldt River Co. in the mine will be sold under foreclosure by mortgage.

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

OVERMAN.—From the Gold Hill *News*, Sept. 4th: We have reliable information to the effect that some very good ore was found yesterday, in the drift north from the 500-ft. level, but not much of it is to be taken out at present owing to bad air. It is said to assay about $60 per ton. A very large body of lower grade ore exists at the 500-ft. level, which breasts out 60 ft. in width. An assay of it made this morning showed $43 to the ton. The yield of the mine is increased to 60 tons per day, averaging about $20 per ton; 63 men employed in and about the mine.

HALE & NORCROSS.—Owing to repairs being completed, the yield is greatly increased, nearly 200 tons per day being taken out, over half of it from the lower level. In the winze being sunk from the 4th to the 5th level, the vein is now three ft. in width, all high grade ore, averaging $72 per ton; the winze is 63 ft. deep.

SIERRA NEVADA.—The clean-up on the 31st turned out well. A drift west in the surface workings develops a large quantity of excellent ore, well sprinkled with free gold. Another good streak is found in the upper tunnel, three ft. in width, and widening.

CHOLLAR-POTOSI.—This mine continues yielding well, 225 tons of ore per day being taken out—assays averaging nearly $70 per ton.

IMPERIAL-EMPIRE.—The repairs to the shaft are completed down to the 1,080-foot station, and drifting southward.

GOULD & CURRY.—The old upper workings are yielding nearly 40 tons of ore per day, averaging $38 per ton.

TWIN.—This little mine, at Silver City, yields about $10,000 per month. It is a gold vein, from a foot to three and four feet in width, and the ore is worked at the Ione mill, and arastras on Carson river.

YELLOW JACKET.—There remains yet 16 ft. of mud and water to get out of the north shaft before getting down to the track floor of the 700-ft. level.

VIRGINIA CONSOLIDATED.—Shaft 171 ft. deep to-day. The new hoisting works operate well. Very little water is encountered as yet.

OPHIR.—The drift west at the 700-foot level is now in 572 ft. from the shaft, with nothing new.

HEAVY SHIPMENT OF BULLION.—Last Friday night there was shipped from the office of Wells, Fargo & Co., Virginia, 3,055 lbs. of bullion, worth $93,702.13, and by the Pacific Union Express, bullion amounting to $5,735.14; total, $99,527.27. This is the heaviest single day's shipment of bullion from this section which has been made for several months. A large proportion of it was, of course, from our Gold Hill mines.

ITEMS.—*Enterprise*, Sept. 5th: Amount of ore raised in the Yellow Jacket during the past week, is 1,683 tons....In the Lady Bryan, 40 tons of $25 ore raised daily.... In the winze, a 5-ft. vein of gold-bearing ore has been developed, which will assay $200....New pumps in the Hale & Norcross will be in place by the 23d inst.... Fire in Kentuck entirely extinguished, and prospects flattering.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, Sept. 4th: "The improvement in mining affairs still continues. The number of hands employed is increased every week. But for the lack of milling facilities the quantity of ore shipped would be doubled, as several of our best mines—the California, Aurora South, Eveniag Star Consolidated, and Pogonip and Othello—are sending no ore to mill, and have large quantities accumulated on their dumps. The first three belong to the Stanfords, and have 2,000 or 3,000 tons awaiting the completion of the Stanford mill, which will be running in about two weeks with 30 stamps, and several other mines are awaiting better and cheaper facilities for milling. Should the winter hold off late, the number of stamps will probably be increased to about 200, which will be kept busy all winter, turning out bullion at a rate of at least $100,000 per week. The Tom Paine mine, recently purchased by a Chicago company for $20,000, has been sufficiently opened to develop a well defined east and west ledge, over 12 ft. in width. The ore is of high grade, showing largely of horn silver and chlorides. The mine is 300 ft. below the crest of the bluff, and midway between the Eberhardt and Hidden Treasure. The bullion shipments aggregate $61,606.54, being something less than the amount last week."

ITEMS.—*News:* Aurora South is working 50 or 60 hands....Aurora Consolidated is sending 40 tons to mill daily. The Earl mine, now the property of the same company, is yielding largely of high grade ore. ....Five or six men employed in the Bromide tunnel....Consolidated Chloride Flat is employing 125 men, and sending 50 tons to mill per day....Eberhardt is working 25 men....Evening Star Consolidated only five at present....Fifteen on Eclipse Consolidated....Industry declared a dividend last week of 20 cents per share; the third in two months....Mammoth works 16 men, and takes out 10 tons daily....Mazeppa takes out four tons per week of ore worth several hundred dollars per ton, and 10 tons of second class ore....Manhattan works 16 men. It has been bargained to an Eastern company, we believe....Sagebrush works 24 men, and takes out a large quantity of good ore daily.

LOOKS LIKE BUSINESS.—*News*, 4th: A Cincinnati agent came out and bought several mines and interests in mines, on the Hill. He bought the Big Smoky mill, and removed it to a mill-site at the foot of the hill, near Hamilton. The mill cleared its cost in 30 days, and ground enough has been sold from the mines to clear the cost of all the purchases; so the company has property marketable at a million dollars, and all cleared in a little over two months time.

IMPORTANT TRIAL.—In the early part of next week the most important trial ever prepared in this district will be called in the District Court. This is a contest between the Rathburn and Hidden Treasure companies. The claims are in line, and they lap some 350 ft.; and it is for this portion that the suit is brought. This portion however, includes that ground wherein the Original Hidden Treasure has made its best developments.

UNFAIR CRITICISM.—The *Empire* of Sept. 1st, deprecates the sneering tone of some of the interior papers,—and while admitting the fact that times are harder than they ought to be, considering the regular bullion turned out, asks the Reno *Crescent*, if it ever heard of a White Pine mill that did not make more money than any other mill? After crediting the present depression to the condition of financial affairs in San Francisco, it closes with advising everybody who is discouraged to emigrate to Lander or Washoe!

MILLS.—*Empire*, Sept. 1st: Mr. Tregloan's new mill machinery has all arrived, except the pans which are hard by. The stamps, 10 in number, will weigh 850 lbs. each....The Treasure Mill (Big Smoky) crushed during August, 817 tons of ore, which yielded $78,777, or $96.50 per ton. ....The Kohler mill is being increased to 20 stamps. In 20 days the new 60-horse power engine will be in place....The damage done to the Dayton mill, which was wrecked by the tornado of the 28th Aug., is about $2,000. The delay will not exceed two weeks, and the mill will steam up about Oct. 1st....The Manhattan mill, 24 stamps, is kept in constant operation.

OUTSIDE DISTRICTS.—The 15-stamp mill will be in operation in two weeks....In Sacramento District, a negotiation is pending with a San Francisco company for a series of ledges, consisting of the Oro Fino, Sacramento, Boston, and La Plata. To test the quality of the rock, a ton has been taken from a depth of eight feet, in the Sacramento and Oro Fino ledges. the rock to be worked in San Francisco; and if it works in mill $25 to the ton, the company is to pay the locators $40,000 for the property. It is one of the conditions of the sale, that Dr. Hall, who acts for the San Francisco company, is to build a mill in Sacramento District, and do custom work. This is now the point on which the early prosperity of the district turns—if the sale goes, and the machinery is shipped out this fall, Sacramento is all right.

Oregon.

BURNT RIVER.—Dalles *Mountaineer*, Aug. 27th: Judge McCoy arrived on Monday from the "Big Ditch." A contract has been made with Chinese firms to complete the ditch to Camp Creek, 23 miles farther. This will be done by the middle of October. There are nearly 200 men at work. The Judge is satisfied that the region will be one of the richest on the Pacific slope. The length of ditch already completed is 45 miles. The capacity is 1,100 inches.

A Mr. Copeland is reported to have discovered a rich silver-bearing quartz ledge in the Willowa district, Baker County.

QUARTZ.—*Oregonian*, Aug. 28th: The Jordan Creek quartz lead, 2½ miles from Cañonville, is being prospected by Messrs. Gordan, Lord, Levans and Abrahams. They have sunk a shaft 60 feet, and are about to commence tunneling. They have an arastra erected, and have already crushed several tons of the rock, from which they took gold enough to place the richness of the lead beyond question.

VANCOUVER MINES.—Thomas Johnston has returned from these mines and reports unfavorably. He says that it will cost $5 to take out two bits.

DYNAMIT HEADACHE.—We clip the following from the San Francisco editorial correspondence of the N. Y. *Engineering:*

"The headache experienced by those who employ nitro-glycerine in any form as an explosive, doubtless arises from the presence in the air, after explosion, of particles of the original substance, not consumed, just as in the smoke of powder we have an evidence of imperfect combustion. The less visible smoke remains, therefore, after a blast of Giant powder, the less time will be required for its effects on the air to disappear. Proper adjustment of the charges to secure absolute combustion is a matter bearing directly on the same point. Few mining captains have yet found out how small a charge may be advantageously employed. The almost universal mistake in the use of this explosive is overcharging the holes. (*The useful effect of a blast does not increase in the ratio of the amount of the explosive*—least of all when the explosive is a *quick* one.) Even if Giant powder gave noxious fumes, the evil could be reduced to a minimum, and would be far less serious than those experienced in quicksilver, arsenic, or even common metallurgical works. But the general evidence is, that after becoming accustomed to Giant powder, no one suffers from it."

COMPRESSED-AIR DRILLING AT THE HOOSAC TUNNEL.—A correspondent of the Rochester (N. Y.) *Union* gives an account of a trip through the tunnel. He says: "Before entering the mountain, we examined the works at the river's side, by which the tunnel is making its way toward North Adams. We found, in a building called the 'Compressor House,' four immense air-condensing machines, each working four cylinders, by which air is driven through a pipe more than a mile into the tunnel, and there made to do the work of steam in drilling the rock at the 'heading,' as the remote end of the tunnel is called. Such a wheezing, puffing, and groaning you never heard air make. And no wonder. It was obliged to be crowded into an immense number of atmospheres, and made to travel 5,700 feet through an 8-inch pipe, and jerk and twist a steel drill into a vein of quartz rock almost as hard as adamant. It labored very severely to do this work, so when we get our short trunk line from Rochester to Boston, we cannot be too grateful to the vigorous air which gives us the Hoosac Tunnel. We must also thank Deerfield River, which is all used up in working the compressors."

CHUBB AT THE WOLVERHAMPTON EXHIBITION.—An English exchange has the following: "The display of Messrs. Chubb & Son is, without doubt, the *chef d'œuvre* of the section. Among the locks, none is, perhaps, more noteworthy, as an embodiment of artistic skill, than one in the Florentine style, the works of which are encased in polished walnut, ornamented by richly cut steel of beautiful and elaborate design, and burnished to the highest point of excellence. Chubb's patent "detector" locks are displayed in all the newest styles of design and ornamentation, and one, by way of curiosity, is set as a "jewel" in a gold finger ring. This is nearly as great a marvel of ingenuity as the lock said to have been made in Elizabeth's reign by a noted smith yclept Mark Scaliot, which lock, according to the veracious chronicles of tradition, consisted of eleven pieces of iron, steel and brass, all of which, with a pipe-key, weighed only two grains of gold."

JAPANESE MECHANICS.—Some years ago, when our Government made the Japanese a present of several Dahlgren boat-guns, they went to work and used them as patterns after which to make others. It is not unlikely that the mining machinery above alluded to may be intended ulteriorly to serve a similar purpose. In addition to the practical application just alluded to of the guns, the smart mechanicians copied in the same manner a Sharp's rifle which accompanied the others; and not only this, but they added an improvement for lifting the hammer automatically by the act of opening the breech for loading.—*Artisan.*

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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OUR AGENT, Wm. H. Murray, is now on a tour through Siskiyou, Trinity, Shasta, Tehama, Butte and Yuba counties, and will look after the interests of the PRESS on that route.

San Francisco:
Saturday Morning, Sept. 11, 1869.

Notices to Correspondents.

J. G., San Andreas.—We some time ago gave a diagram of the deepest mining shafts in the world, the deepest (now disused) being in the Tyrol. According to a notice in a recent Lancashire paper, of which we subjoin an extract, it would appear that the deepest mining shaft now at work is to be found in that county: "At the Rose Bridge Collieries, Ince, near Wigan, Mr. Bryham, manager to John Grant Morris, Esq., has just proved the seam of coal known as the Arley, at the enormous depth of 810 yards: At this pit, on the 3d of March, 1862, the celebrated Wigan cannel was (in this belt) first found, at a distance of 600 yards from the surface; lately the Yard mine was found at 673 yards; and now, seven years and a half after, the cannel, the valuable Arley, has been struck at the depth already stated. The sinking of the last 200 yards has been prosecuted in the night only, as the cannel had to be wound by the same shafts in the daytime. One is sixteen feet and the other twelve feet in diameter, and their construction has been unattended by any accident whatever. It is stated that the Rose Bridge deep pit is now the deepest perpendicular shaft in the world, and that it works the deepest mine yet proved in Britain. When the "dib hole" at the bottom is sunk, the total depth will only be three score yards short of half a mile.

ESAU.—The earliest notice of iron works in Britain is to be found in the commentaries of its earliest Roman invaders. According to Cæsar (De Bello Gallico, V. 12), iron rings of a certain weight were in use, as well as brass, for money. It is stated also that in small quantities, iron was found in the maritime parts of Britain (by which is understood the present county of Sussex), probably obtained from the Hasting iron sand-beds. At a later Roman ago of British history, small iron forges were employed in the Forest of Dean, at which place, amidst the scoriæ, debris and ruins, are found occasionally at the present day, fibulæ, images and coins of Trojan and the later emperors. As the woods became consumed in the south of England, the iron trade gradually settled in the coal districts. Perhaps not more than a couple of small furnaces now use charcoal for reducing the ores of iron; and these are only to be seen in Furness, where the red hematite is so largely found.

MINER, I. T.—Had you given the date of the item referred to, we might answer. For the address of a builder of an efficient safety-cage, see item in another column.

FOREIGN PATENTS.—Frederick Wittram, of San Francisco, California, has made application for an English patent, for an invention of "Improvements in Screw Propellers."

Scientific Impossibilities.

We propose to make brief mention of some of the scientific *ignes fatui* which have from time to time danced provokingly before the eyes of truth-seekers, but have always eluded their grasp, even when apparently within easy reach. Not having been actually demonstrated to be absolute impossibilities, they are assumed to be possible; and each victim fondly imagines himself destined to be the fortunate man who shall win imperishable fame by the long-sought solution. Leaving out of the question the old-time search for the "philosopher's stone,"—which should transmute, at the will of its holder, all metals into gold;—and the "elixir of life," which should secure to its fortunate possessor perpetual youth,—we begin with

The Squaring of the Circle.

The finding the length of one side of a square which shall contain the same area with a given circle, has for centuries engaged, more or less, the attention of mathematicians. The difficulty lies in the fact that no whole number will give the proportion which the circumference of a circle bears to its radius. It can be expressed only approximately; and is usually given as 3.1415. But the four decimals which form a part of this number have been, by patient labor, extended to more than *six hundred*, without reaching exactness; and although of course approaching nearer and nearer to the truth as the array lengthens, might undoubtedly be carried up to as many millions, without precisely giving it. So much for the arithmetical expression of this proportion. The determination of it by geometrical construction is now generally admitted to be equally impossible. There is an infinite element in the question. The ratio between two lines, one of which—the circumference—has neither beginning nor end, is not measurable by finite figures.

A Perpetual Motion Machine.

Another dream of these sanguine searchers after the impossible, is a machine which shall contain within itself its motive power, and which, without external aid, shall continue in operation until worn out. Years have been wasted in attempts to produce such a machine, and mechanical talent which, exercised in a proper direction, might have achieved much, has been thrown away. The progress, however, which within the last half century has been made in physics, and the enunciation of that grandest doctrine,—that of the "Conservation of Force,"—has effectually disabused all scientific minds of the notion; and it is now confined to those self-taught and too self-reliant individuals, who ignore "the books," and depend on "mother-wit." It is now known that *force*, like matter, is indestructible; and that throughout all its changes in form, or mode of exhibition, it is always to be accounted for in full. The motion which is at any time its result, is always resolvable into some other kind of motion. Thus, the motion of a bullet fired against a wall, is converted into motion of the particles of the bullet and of the wall, which motion is more or less rapid as the force was greater or less with which the bullet was projected; and may be so rapid that these particles will separate to a greater or less distance from each other,—perhaps so far, indeed, that the bullet will become liquid. That is to say, the force may be changed into heat. If the force of the bullet be applied to the putting a machine in motion, only such portion of it will be available for that purpose, as is not expended in heating the bearings of the machine through friction. The machine originates no force; it simply determines the manner in which the force shall be exhibited. As, then, a portion of the force is constantly wasted by friction, and as a machine without more or less friction is impossible, the force will at last, unless constantly renewed by outside agency, disappear entirely, *as force*, and the machine come to rest. A perpetual motion machine is therefore an impossibility.

Laboratory Protoplasm.

The hope of ultimately solving the problem of "life," in the laboratory, is in our belief another *ignis fatuus*. A recent lecture upon the "Physical Basis of Life," by Professor Huxley, a scientist of merited eminence and unquestioned sincerity, has given rise to much remark. He takes the position that all living matter has unity of composition; that the "protoplasm" or primordial substance from which the simplest organisms are evolved, is essentially the same in both the vegetable and animal worlds; that while the animal is dependent for this "matter of life" upon the plant, the plant elaborates it from mineral compounds; and that these compounds are carbonic acid, water, and ammonia,—produced by the union of carbon, oxygen, hydrogen, and nitrogen, in certain proportions and under certain conditions. From these data, he looks forward to the conclusion that there is no reason why we should not be able to manufacture protoplasm *ad libitum*, as soon as we have made ourselves acquainted with these *certain conditions* aforesaid.

Now we have no fault to find with Prof. Huxley's premises. There is no doubt that, so far as chemistry can show us, the contents of the minute nettle-hair are made up from the mineral compounds above-named, as well as are the colorless corpuscles which we find in the drop of blood just drawn from the finger. Both are protoplasm. By the aid of a powerful microscope, we may see that both are in unceasing motion; that both have life. But these two substances are manifestly not the same. Each does its own work. One produces nettle-matter, the other muscle. What makes the difference? If Professor Huxley, by a judicious combination of carbonic acid, water, and ammonia, could produce a substance which, like one of these specimens of protoplasm, was endowed with the liveliest possible motion for an unlimited time, could he make it reproduce itself? What *is* itself, by the way? Is it the embryo of a cow? Or of an eel? Or of an onion? How shall he determine which it shall be? Does he suppose that, the materials remaining the same, forms of life are made different by different conditions, all of which conditions we may gradually acquaint ourselves with, so as to reproduce any given form at will? Or does he suppose that *any* form, *any* protoplasm, once produced in the laboratory, is indefinitely developable into the highest form of life, without external aid?

In either case, of course, man is made his own creator. The obvious inference is, that there is no higher being than man; that Law reigns Supreme; that there is no necessity for a belief in a personal intelligence which is the author of that law, and which, in accordance therewith, supervises the Universe. The necessary result of such a belief as this supposes, is the doing away with all such antiquated and ridiculous notions as those of right and wrong. The sanctity of an oath is a humbug; for an oath is an invocation of penalty for non-performance, to be inflicted by some higher power. A future life is a chimera; for man is a mere bundle of atoms,—a mere resultant of forces,—a mere aggregation of carbon, oxygen and the rest,—and his individuality ceases when that aggregation ceases. If such a belief were to become general, love—other than sensual—would become a mere name; and all emotions and sentiments of an exalted character would become impossible. Let those who hesitate to admit these to be the legitimate consequences of such a belief, coolly follow out the thing to its logical conclusion.

There are those whose inner perceptions are so completely "occluded" within the outer shells of carbonic acid, water, and ammonia which constitute their visible selves, that they will sneer at this kind of talk as due to a superstitious reverence for early teachings, and as unworthy of those who believe at all in such a thing as science. To such we would adopt a different tone. We would say, that *we* believe in an Infinite Personality because we cannot fill the hill without it; we cannot account for the phenomena in any other way. We see the necessity of an infinite element in the calculation of the world's problem, just as the mathematician sees the necessity of such an element in *his* calculations. No truth is more absolute than mathematical truth; yet the higher mathematics finds it necessary to admit into its demonstrations an element which cannot itself be demonstrated. In no other way than by supposing an outside influence, tending to act upon man, can we explain the fact that we are *free*. Every man *knows* that he is free to act as he likes. But suppose he was simply the resultant of chemical forces? He knows equally well that in that case he could *not* be free; for he must necessarily act in accordance with those forces. The existence of another balancing influence is thus in a manner logically deducible; and it is in the fact that in his action he has the choice between these influences, that his freedom lies. The fact of this choice is not incompatible with the other fact that the law governing his being are inviolable; for it places it in his power to modify that being, in accordance with those laws, to an indefinite extent towards perfection. The more he knows of those laws, then, the better. Science, therefore, is progress, for it teaches him those laws.

When Professor Huxley can explain why it is that a mixture of oxygen and hydrogen in certain proportions disappears when the electric spark passes through it, leaving in its place *water*, a substance totally unlike either,—a process which, as he truly says, we do not yet comprehend,—and which,—by the way,—is one of the first steps in the manufacture of protoplasm, water being one of the compounds necessary to start with,—it will be time enough for us to begin to believe that he is perhaps about to flash into life that protoplasm itself. When he can tell us why salt crystallizes in cubes rather than in any other form, exhibiting thereby an individuality—so to speak—of its own, impressed upon it by some other agency than that of man,—we shall believe that one small step is gained towards explaining those immeasurably higher individualities which reproduce themselves. But even should he produce before us a single cell, or a single particle of substance having vitality, with proof that it did not derive that vitality from previously existing life, we should still demand that he go farther; and prove, in order fully to make out the case, that the conception of an invisible Supreme Personality,—which *to us* seems the highest conception of which an organism is capable,—is one and the same thing, except in degree, with the suction by which the jelly-fish absorbs its nutriment.

A RELIABLE SAFETY CAGE.—The cable of the safety cage at the Crown Point mine broke a few days since, when 300 feet above the bottom of the shaft. The safety attachment worked admirably, arresting the fall within a few inches of the start, although the iron cable above, nearly 900 feet in length and weighing about a ton, came thundering down from the mouth of the shaft to the top of the cage. The cage and its load weighed 2,600 pounds. Had the cage been without any safety attachment both it and the car must have been dashed to atoms, and the shaft, in all probability, seriously injured. The cage, with its safety attachment, was made by Mr. Alexander McMartin, the head blacksmith of the works, and the severe test to which it has been subjected affords ample evidence of the faithfulness of his workmanship.

Running Bullion Down Stream.

We too often hear the expression, that mining on the Pacific, as a business, is a failure. That it has not yet paid back the amount which it has received as an investment in the erection of machinery and cost of mines, is no doubt true; but there are two things to be taken into consideration in this connection.

First, it has given employment to a vast number of our people. Second, we have been at fault, to a great extent, in *running bullion down stream.* Our most intelligent millmen admit the fact, that, on an average, taking the States of Nevada and California, the returns by working does not exceed one-half of what the ore contains, as determined by careful assay.

The fault then, cannot be that the ore does not contain a sufficiency of the precious metals; but that our system of working the ore is not up to the requirements of the business. The fact that one-half of the metal is run down stream, is ample proof of improper working, and affords a matter for deep consideration. It is one, indeed, which might, with propriety, become a question for national legislation.

The several U. S. Mining Commissions have condemned the present mode of working, in strong terms, and suggested the idea of interference on the part of Government with our wasteful use of the people's patrimony. It would seem, however, that individual interest should exercise as much care in this respect, as Government might enforce; and yet it does not.

There is one thing quite evident—we endeavor to work too much ore to the stamp, instead of striving to work up on percentage of metal.

The fact that the mine owner has erected stamps under which to pass the ore, and pans in which to grind and amalgamate it afterwards, should not be accepted as the whole question of getting the metal out; for though the ore may be rich in gold or silver, it may also contain some substance which renders the ordinary modes of treatment ineffectual in saving the same.

One of the troubles connected with this question of running bullion down stream, is the utter incompetency of too many of our mill and mine managers. Mining is not a mere business question, which any ordinary business man can conduct; but it is one which requires a mining education, in all its peculiarities, to be made a success. We have so often discussed this question, that it seems idle to waste further time on it. What cannot be changed by the loss of dollars and cents, it is hard to change by talk. A correspondent, on the second page of the present issue, makes some pertinent remarks in reference to this matter.

The evil must correct itself; and we trust the present depressed condition of the mining interest will aid in bringing about such a result.

The time was, when if one owned a mine, he had prospects of wealth; but owning a mine now is received as having a tendency to reduce a rich man to poverty; and yet the mines figure up largely in value, when we take the average assays, and measure the cubic feet of ore in the mine.

One remedy for the betterment of the mining interest is the avoiding of needless expense in machinery. With large mills, too much low grade ore is put through in order to keep the mill running; whereas, with smaller mills, there will be more care in selecting. Small mills and careful assortment of ore, is something which is quite too little considered in both gold and silver mining on the Pacific Coast. Everyone knows that small pans generally produce better results, on the average, than larger ones. The reason is, because more care is taken with the former.

Up to this time, Californians have hardly realized the value of gold and silver in the rough. A five-dollar piece they will take good care of, after it is coined, and at the same time run off $100, in their mining operations, with less consideration than the five dollars would receive, if it had slipped through a hole in their pockets. This wastage should be stopped—less ore should be worked, and that which is treated should be worked better. In so doing, we think mining can be greatly improved, and, indeed, made the best and most legitimate business on this coast. Such a result, however, cannot be reached so long as we continue to run the bullion down stream, at the rate of 40 to 50 per cent. of what the ore contains.

Agricultural Fair Week.

A gala week at Sacramento, which was not unlike the usual previous annual agricultural jubilations at that place, held in the interest of the most honorable and independent of productive occupations, since 1850, closes with the issuance of the present number of our paper—while the Mechanics, Manufactures and Commercial Fair of the Pacific slope, is just on the eve of opening at the metropolis by the sea. Sacramento appropriately represents the interior, its agriculture, its legislative organization, and the grappling of Californian spirit with adverse material elements,—our conquest of space by the completion of the Pacific Railroad. Never have we seen the State Capital, nor indeed the State in the interior, so auspiciously and hueyantly jubilant as during the gala week of the Fair just closed.

The State Fair is a part of California. Its wonderful fruits, and great grape clusters, its figs, almonds, oranges, and pumpkins all brobdignagian, must be seen by one before he can say he knows much about California; its superb stock congregatious, in the perfection of which our large rancheros have manifested a kind of furore of emulation, constitute one of the peculiar features of our individuality. Splendid horses have been diligently sought out, and systematically distinguished by munificent premiums since our earliest days of farming in these treeless soils. Have you never been to the State Fair? That is impossible if you are a Californian, for every Californian has.

Tens of thousands of people, on the grand stand, or in the mazes of Agricultural Hall, testify that in population already we have a great interior. Often rusty but substantial-looking faces, and comfortable presentments, indicate the honest, sturdy, and prosperous condition of our inhabitants of the interior.

The State Fair is much more now than it ever has been heretofore, because railroads from four quarters of the compass, now pour in daily armies of excursionists, at excursion fares, even from distant points. Think of half a dozen car-loads of visiters to the State Fair creeping up the banks of the Truckee, and pouring at early morning through the sag of Donner Pass, like a summer fog over the Coast Range, from the Pacific; and then think of the banks of the Truckee in 1863, when not a mark or trace of man was there. Elkoans and Salt Lakers, and Chicagoans, New Yorkers, and Bostonians mingle, to such an extent that one is obliged to re-set one's eyes, in reading the frequenters of to-day, at the State Fair. Yet those queer fish who presido at gambling tables are still on hand and noisy as of old. We glide away from the State Capital by railroad, over a level plain, which we now see presided over, as we look back, by a grand dome, reminding us of the golden one of St. Petersburg. The clatter of the engine on the rails seems to be at the rate of about fifty miles an hour—and thus to San Francisco, by way of Stockton and Livermore Pass.

That the State Fair must make itself an "institution," would become evident by a glance at our peculiar agricultural interests. The men whose names figure in connection with it, who contribute to the State Agricultural Society's valuable reports, do great honor to themselves and good to the country. In the proceedings of that Society we find the information that we need on Land Reclamation, on Silk, and Wine and Tea.

It is needless to compare the last Agricultural Fair with previous ones, for all the Fairs are much alike, and improvement in departments is the gradual growth of years, noticeable only by old and careful observers who have been attendants for a considerable period.

We are satisfied with the size of the products of the soil. But let the agriculturists of California make a little progress now in the building and beautifying of homes. The most unfavorable comment that is made by our eastern friends upon the merits of Californian soil and farming, is that there are not to be seen any more good and comfortable homes. We wander across the Great Basin, and the Plains, for a picture of the old sort. Why is it?

At the Pavilion.

The Mechanics' Pavilion just now is a scene of busy and most varied industry. Carpenters, painters, joiners and machinists are as busy as a hive of bees, getting things ready for the Exhibition which will open on Tuesday next. Many of the exhibiters are already engaged in putting their exhibits in place, or in preparing for that purpose the space assigned them. The printing press upon which the fourth volume of the DAILY FAIR PRESS will be printed, is already in place, and will be in operation immediately after the close of the opening address. This press will be run by one of H. B. Martin's newly patented oscillating engines, which will be put up for that especial purpose.

In many respects the Pavilion has been altered and refitted to the advantage of exhibiters, and for the pleasure and comfort of the thousands who will visit the Fair. Booths are being constructed in the upper gallery. The long Art Gallery has been divided into three rooms, which affords a chance for the classification of articles. The walls are to be lined with canvas, which will add much to the appearance of the rooms. The large fountain has been refitted and improved. It is contemplated building a new structure on the south side of the Pavilion, for the display of agricultural implements, and for the exhibition of the Pullman Palace Car.

Workmen are busily engaged in putting decorations in place. Bunting is being arranged in festoons along the galleries, under which are State shields and escutcheons. Between these are to be placed, in large painted letters, the names of celebrated scientific men and distinguished mechanics. Everything will be completed in time for the opening at eleven o'clock A. M., on Tuesday next, when the opening address will be pronounced by I. M. Scott, Esq.

RINGS ALL THE TIME.—A Detroit inventor has contrived an alarm-bell for locomotives, which, being actuated by the eccentric shaft, is caused to strike at every revolution of the driving wheel. In order that it may wear equally on all sides, the bell is made to partially revolve by the force of each stroke. In case of accident the railroad company can always prove that their bell was ringing according to law, that being the point most difficult to convince a jury, and the one which the railroads have the greatest difficulty in proving. Owing to the position in which the bell is placed—in front of the engine and about three feet from the ground—the sound can be distinctly heard about three miles in the day time, and by night four miles or more; the ground and the continuous rail, both excellent conductors of sound, assisting in carrying the vibrations.

The Patent Office and Inventors.

An "inventor" in New York City complains that there is much mismanagement and even swindling in the Patent Office at Washington. He says that when an inventor applies for a patent he is obliged to employ a patent lawyer—one of a "ring"—to draw up his papers, for which an exorbitant fee is charged, and to present his claim. Otherwise, his interests are delayed in the Patent Office, and after a long while his papers are returned for modifications, which are suggested, our correspondent says, in "such abstruse language that it is next to impossible for an ordinary man to penetrate its meaning." It is charged that the Patent Office clerks are in collusion with the patent lawyers to reject a claim, if possible, where the claimant does not employ a "ring" lawyer, and does not furnish spoils for division. In many instances, the poor applicant is thus driven to abandon his claim after entering his papers; and in such cases, if his invention is good for anything, it is very likely altered in some of its minor details, and then presented and readily patented by some friend of the ring.—*Herald.*

The above statement is being widely published in the newspapers in this country, and no doubt has been convincing proof to many of our inventors that there really does exist a prescribing element which prevents original inventors from obtaining their own patents. This we do not believe, and in fact it would require better proof to our minds than the mere say-so of a complaining "inventor" of New York City, that any such state of affairs does really exist. Patents are issued every week from the Patent Office to inventors on their own application, and it is frequently the case that the examiners give to inventors who have presented informal papers, sufficient hints, "free gratis," to enable them to properly correct and present them.

One fact, however, is frequently lost sight of by inventors. Patent business in its entirety is as much a study and profession as is the common practice of the law in our Courts; and this is necessarily so. It would be impossible to simplify and curtail the law and process to which applications are subjected, owing to the multiplicity of patents already in force; and it is clear to every person that it requires the strictest search and examination, in order to prevent duplicating patents already granted.

Occasionally an invention will be unjustly rejected; but there is always a remedy which can be applied and the inventor's rights secured; and if the suggestions made by the Office are in "such abstruse language," the inventor or his agent has a right to demand a more definite opinion or statement. That agents are more successful in their operations, is not in the least wonderful, for they have made the business a study, and are able to secure their clients' rights with greater certainty than the inventor himself.

A successful patent agent will in time secure an influence in his profession with the same certainty that an attorney at the bar, if successful in gaining his cases, is sure to acquire; and in this we see the operation of the same law that governs in any of the trades and professions. If an individual or firm is successful, we accord credit in proportion to their success; and the fact that they are successful does not prove that there is any "collusion" or "wire-working" at the bottom of it. Let inventors patronize reliable agents, who are successful, and whose success has given them an influence, and they will realize in the end greater benefit and have no fault to find.

CALIFORNIA TIN IN THE FAIR.—An important exhibit of ore from the San Jacinto tin mines, San Bernardino county, will be made in the coming fair. There will also be displayed, in connection with the concentrated ores, bars of the metal, sheet tin, and manufactured tin ware. We shall allude fully to the development of this new and interesting resource of natural wealth.

Mrs. Mary Somerville.

The *Edinburgh Review* properly pays the following tribute to this remarkable woman who has just published the work on "Molecular and Microscopic Science": "The world is not unfrequently called upon to admire the keen interest and powerful grasp which veterans foremost in the ranks of science retain in their various pnrsuits np to the latest moments of an advanced age. It is, however, we believe, a case without a parallel in the annals of science that a lady in her eightieth year should publish a work containing a complete review of some of the most recent and abstrnse researches of modern science, describing not only the discoveries in physics and chemistry, hut especially the revelations of the microscope in the vegetable and animal worlds. Before many distinguished cultivators of the sciences she loves so well were born, Mrs. Somerville had taken a place among original investigators of nature, as in 1826 she presented to the Royal Society a paper on the magnetizing power of the more refrangible solar rays. This communication is printed in the 'Philosophical Transactions,' and led to much discussion on a difficult point of experimental inquiry, which was only set at rest some years later hy the researches of Reiss and Moser, two distinguished German electricians, in which the action upon the magnetic needle was shown not to have been caused by the violet rays. In 1832 she published her 'Mechanism of the Heavens,' and in 1834 she became still more widely known hy the appearance of her 'Connection of the Physical Sciences,' and the 'Physical Geography.' These works have passed through many editions, and have been translated into several foreign languages; whilst in this country her services to geographical science have been recognized hy the award of the Victoria medal for 1869 of the Royal Geographical Society. In her work on "Molecular and Microscopic Science,' the gift of lucid description, so characteristic of the distinguished authoress of the 'Connection of the Physical Sciences,' is as conspicuous as ever; hut that which most forcibly strikes the reader of these pages is the extraordinary power of mental assimilation of scientific facts and theories which Mrs. Somerville displays."

MOSES G. FARMER—A TESTIMONIAL.—Our readers will remember this name, for we have before mentioned it in connection with the improved telegraph wire of Mr. F.'s invention. The Boston *Traveler*, says: "A few days since Moses G. Farmer, Esq., of Salem, Mass., was presented with a sardius, or red carnelian intaglio, of Sir Isaac Newton, estimated to be about 200 years old, hy S. W. Dewey, of this city, in consideration of his electrical investigations and inventions. This latter gentleman, in presenting it, stated that since being its proprietor he had often thought he would present it to Professor Morse, in token of the great good he had conferred upon the human family hy his telegraph inventions, but lately he had become convinced that Mr. Farmer, the inventor of the fire-alarm telegraph and the American compound telegraph wire, was eminently deserving of it. Mr. Dewey received the intaglio from a Mr. Bishop, late of New York, who received it from his father, who was a diamond setter to the sovereigns of England, France, Spain, and Portugal, and the records held hy him of the jewels he had in his possession were such as to leave no doubt as to the antiquity of the gift and the probability that it was taken from life."

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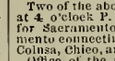
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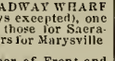
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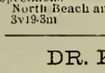
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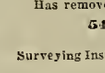
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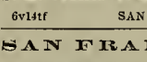
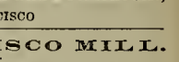
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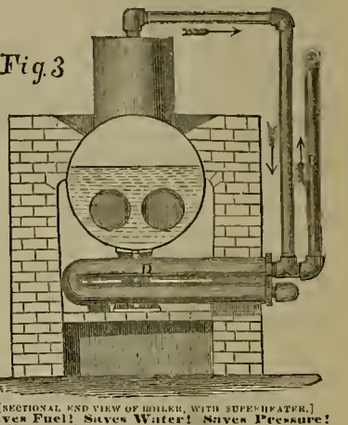

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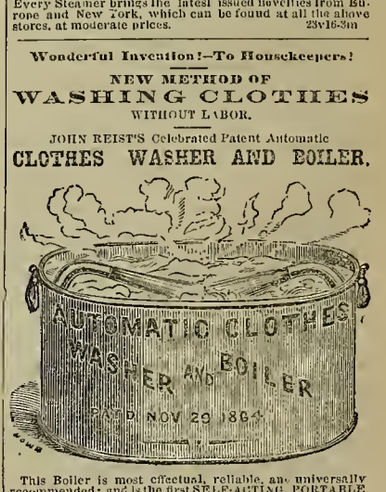

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S Patent Office, November 4, 1868. See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco, Dealer in Stoves and Tinware.
25v1 3m 67 and 69 Fourth st., bet. Mission and Jessie sts

The Pacific Railroad—Positively Open.—At last, rail communication between the Atlantic and Pacific is complete. On Mouday last, the first through train on the Western Pacific Railroad arrived at Alameda from Sacramento. The occasion was made one of great rejoicing. A large crowd met the train with cheers, which were lustily kept up until it had passed under the triumphal arch of flags and flowers that had been erected. Guns fired, locomotives whistled, bells rang, and everybody felt that something notable had taken place. The Alameda track is only to be used temporarily; the main line to Oakland will soon be completed. One who desires to make the entire journey across the continent by rail, avoiding the boat trip across the bay, can now do so by making the detour via San José.

Colorado Ore for Europe.—One hundred tons of ore have recently been started from Colorado, in wagons, for the Pacific Railroad, on its way to Europe, to be there smelted. It is thought that as soon as the railroad is completed to Denver immense amounts of rich ore will find their way by rail to New York, thence by sailing vessels to Europe, to be treated at the metallurgical works there. Such things ought not to be. The skill, means and labor ought to be found in our own midst, capable and willing to do such work at a cost and with a degree of perfection which will not admit of the shipment of our ores to foreign ports at such enormous expense as is necessarily involved in their transmission from the very center of the continent.

Emigrant Travel—Terrible Destitution.—The Elko *Independent* says that long trains of emigrants may be almost daily seen winding their slow and tedious way through that place toward California. A journey of 2,000 miles, through desert and wilderness, by the side of a railroad, seems something strange in this age of rapid locomotion. These emigrants, however, started before the present low rates for such travel were offered by the overland route. Second class cars and cheap fares will probably close out this mode of reaching the Pacific coast by another year.

The Silver City (Idaho) *Avalanche*, of a later date, says that terrible destitution and suffering exists among that portion of the emigrants *en route* for Oregon. Indian depredations, sickness and accidents are the cause of the suffering.

The Sutro Tunnel.—The Sutro Tunnel Co. has made an appeal to the public to subscribe to the stock in large or small amounts. They offer the unassessable ten-dollar shares at five dollars. The Virginia and Gold Hill miners' Union passed a series of resolutions on August 25th, in which, after a preamble to the effect that the miners are especially interested in the success of the enterprise, they agree to subscribe fifty thousand dollars in gold to the stock of the company.

Tree and Shrub Box.—Gustaf Gustafson, of Oakland, Cal., has patented an improvement in that class of boxes used by nurserymen and others for containing earth, in which small trees and shrubs are grown and preserved for transportation, and consists in hinging the sides of the box to the base or pedestal upon which they are placed, or which is used as a bottom to the box, so that they may be allowed to fall out and leave the earth, in which the tree or shrub is planted, free to be removed in a mass, which can then be done without disturbing the soil about the roots of the tree.

Admission Day—The Pioneers.—The Pioneers celebrated Admission Day, on Thursday last, with a procession and an address by John S. Hittell at the California Theater. The Second Brigade, California Militia, paraded and were reviewed by Major-General Allen.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

For the Week Ending August 31st.

Shrub and Flower Box.—Gustaf Gustafson, Oakland, Cal.

Washing Machine.—Hermann Carmer, Sonora, Cal.

Rock Crusher.—J. Harvey Day, Walla Walla, W. T.

Screen Punching Machine.—J. Wellington Nesmith, Black Hawk, Colorado.

Meetings, Elections, Etc.

Senator S. M. Co.—Aug. 25th. President, Nathaniel Page; Secretary, T. B. Wingard. Trustees: J. E. de la Montagnie, Nathl. Page, Daniel Murphy, H. V. S. McCullough and E. G. Bridleman.

Great Central G. S. & C. M. Co.—Sept. 7th. Trustees: Thomas W. Mulford (President), F. P. Swett (Treasurer), Washington Ayer, J. H. Culver and C. A. Murdock. Secretary, Ira G. Hoitt.

Pinto S. M. Co.—Sept. 6th. President, R. B. Cole; Vice President, Louis Schumacher; Secretary and Treasurer, David Arrowsmith. Trustees: R. B. Cole, R. C. Johnson, G. E. Barnes, L. Jacobi, Louis Schumacher, Julius Adler and C. P. Schmidt.

Succor M. & M. Co.—Sept. 7th. Trustees, P. J. White, F. K. Shattuck, John Rule, J. M. Douglass and E. J. Moore.

A Magnificent Chair for President Grant.—N. P. Cole & Co., the well known furniture manufacturers of this city, have just completed what is thought to be the most magnificent chair ever built in any part of the world. This chair has been built to the order of a number of gentlemen thoroughout the State, who, without distinction of party, have taken this means to present to the President some substantial testimonial of their regard. It has been made of California laurel, most elaborately carved and ornamented, and will be placed in the Mechanics' Pavilion during the Fair

Four Hundred Lives Lost.—A fearful colliery explosion occurred in Dresden, Saxony, on August 2d. The London *Times'* correspondent writes thus from that city Aug. 5th: "Early on Monday morning last, intelligence was received here that at a short distance from this city upwards of 400 men had fallen victims to a terrific colliery accident. At first it was hoped the numbers were considerably exaggerated, but it is now nearly certain that the figures will prove even greater, 420 or more being absent from the roll-call on Tuesday."

Frogs as Merchandise.—The San José *Mercury* says that great numbers of frogs are being sent from that neighborhood to the San Francisco market. "Boxes of these amphibious quadrupeds," says that paper, "are sent to San Francisco several times a week. It is getting to be quite a profitable business. They are raised from the seed, require little cultivation, considerable irrigation, and produce about four bushels to the acre."

A New Sleeping-Chair.—Hon. T. C. Theaker, the late Commissioner of Patents, has obtained a patent on a railroad sleeping chair of his own invention, which he will soon introduce into use. It is said to be a complete arrangement for the comfort of railway passengers.

The Powell Expedition.—A Salt Lake telegram of the 8th, says that Maj. Powell with the Colorado exploring expedition reached the north of the Rio Virgin on the 30th, having made a successful trip. Nothing necessary to the success of the exploration was lost.

Continental Life Insurance Co., 302 Montgomery street, corner of Pine.

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At the end of each quarter a large number of our weekly issues for the preceding three months are bound up in book form, which, by special arrangement, are placed upon the ferry boats and various steamers leaving San Francisco and other ports on the Pacific Coast, for free reading by the intelligent traveling public. The Quarterlies are also to be found in the principal libraries, depots, hotels, and free reading rooms of the Coast.

This, in addition to our Monthly Series and large weekly circulation, makes the Press the best and cheapest general advertising medium throughout the Pacific Coast. The value of advertising in our columns, however, is best determined by those who have tried it, and we respectfully refer to our patrons in that line. No paper in the United States can boast a better class, and no weekly paper on the Pacific Coast receives as large a sum for regular advertising, or has more constant or long-continued customers.

Contents of Our Illustrated Patent Circular.

[Sent free on application.]

Advancing Cases; Advantages, Important; Assignments, Forms, Cost, etc.; Caveats of what they Consist, Form of, Cost, how Filed effectively; Cost of Obtaining Patents; Confidential Advice; Copies of Patents Assignments, etc.; Copyrights; Dangers of Delay; Designs, Patents for; Engravings and Illustrations; Engine, Condensing-Beam—Illustrated; Extension of Patents; Foreign Patents—all Countries; Foreign Inventors; Hints to Inventors; Government Fees, List of; Home Counsel; How to Obtain Patents—Steps Necessary; Hydrostatic Press—Illustrated; Interferences; Influence at Washington; Laws (U. S.) and Decisions Relating to Patents; Lathe, Engine—Illustrated; Letters Patent—of what they Consist; Library, Reports, Law Books; Locomotive Engine—Illustrated; Medicines or Compounds, Patent for; Mechanical Movements—Illustrated; Mining and Scientific Press Office; Processes, Patents for; Record of Pacific Coast Patents; Re-issues; Rejections—Cause and Remedy; Reports of Patent Office; Rights and Privileges of Inventors and Patentees; Saving of Time; Self-evident Facts; Selling Patent Rights; Springs, Various Kinds—Illustrated; Stamp Battery, Quartz—Illustrated; Telegraph, Patent Business by; Unsuccessful Applicants; Who can Obtain Letters Patents; What Claims can be Patented; Worthless Patents, Candid Reasoning.

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To the special merits of your articles on exhibition by advertising them in the Mechanics' Fair Daily Press. The paper has a wide and extensive circulation amongst the most live people of the day, and you and your wares will become known to thousands that would otherwise know you not.

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To have a good look at the distinguished visitors from the East, and compare them with our own business men, use Muller's opera glasses and Brazilian pebble spectacles. ***

To the miner, farmer and mechanic—the three great interests that form the base and ground-work of all our prosperity—this paper should be considered as almost indispensable. We wish the Press boundless success in the future.—*Placer Herald.*

Returned.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. Howland.

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Oruit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewitz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores, Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

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The Fourth Volume of the Mechanics' Fair Daily Press will be printed in the Pavilion, commencing September 14th. It will be distributed free to over **100,000** different persons, affording it a wide and immense circulation.

The Fair Press will contain eight pages, with many illustrations and interesting descriptions of articles on exhibition, amusing incidents of the Fair, and will form a very desirable first-class advertising medium. Advertisers will do well to secure their space early.

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THOMAS MOONEY, President.
August 2, 1869. 6v19-1m

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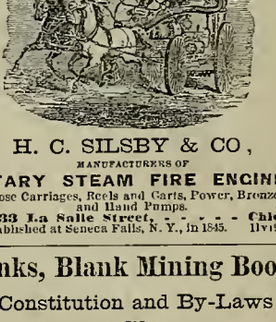

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Information for Inventors and Patentees.

AN EXTRACT

From the American and Foreign Patent Agency Circular of the Mining and Scientific Press, Dewey & Co., Publishers.

U. S. Laws and Decisions relating to Patents.

[A BRIEF AND HANDY DIGEST.]

Design.—A patent for 3½, 7 or 14 years is allowed to any citizen of the United States who originates a new carving or sculptural composition, or a new shape or configuration of any article of manufacture, or a new ornamental or useful design, pattern or picture, to be worked into, or printed or painted, or cast, or otherwise attached to any article of manufacture. Government fee, $10, $15, or $30. [Act 1861.

An engraved or printed design issued as an object of art, having a value in itself, and intended for sale as such, properly comes within the provisions of the copyright law; but when, however artistically executed, it is not produced for sale as a work of art, but is designed to be affixed in the manner of a label to a manufactured article, it then plainly falls under the act relating to patents for designs, and consequently cannot be protected by copyright. [Bishop, Com'r of Patents, Aug., 1859.

Copyright may be obtained for 1st, Printed reading matter, forming ao part of any ornament or manufacturer's mark; 2d, Charts, musical compositions and prints or engravings intended for sale as such. [Act 1831, Sec. 1.

Extension.—Application for extension must be made at least three months prior to the expiration of a patent. The chief points to be established are: 1st, ascertained value of the invention; 2d, amount of loss and profit which have accrued from the invention: 3d, efforts made and difficulties incurred in maturing and introducing the invention. Application fee, $50. Issue, $50. [Act 1861, Sec. 10; Act 1848, Sec. 1.

Joint Inventors are entitled to a joint patent, but neither can claim one separately.

Assignments may be made previous to application, and should be recorded in the United States Patent Office within three months.

The Specification must set forth the invention in such full, clear and exact terms as to enable one skilled in the art to which it appertains, to compound and use it without making any experiments of his own. [5 Howard, 4.

A construction of patents liberal for the patentees is proper. But the description of the patent must be so certain as to be understood by those acquainted with the subject matter. 1 Wood, 53.

The omission to mention in the specification anything which the patentee knows to be necessary for the beneficial enjoyment of the invention, is a fatal defect; but the omission to mention something which contributes only to the degree of benefit, provided the apparatus would work beneficially and be worth adopting, is not a fatal defect. [Web. pat. cas. 317.

The language of the specification is necessarily that of the factory; the technical terms and expressions of the workshop must be used to order for a workman to understand the description to a patented invention, and these are often wholly incomprehensible to a judge and to other legal men until they are explained. [Carp. pat. cas.

Abandonment.—If an inventor (before application for a patent) knowingly suffers his invention to go into public and general use without objection, it is a dedication of it to the public. [4 Mason, 108.

No patent is held to be invalid by reason of the purchase, sale or use, prior to the application for a patent, except on proof of abandonment of the invention to the public; or that such purchase, sale, or prior use, has been for more than two years prior to such application for a patent. [Act 1839, Sec. 7.

Prior Description in a public work, if relied on to void a patent, must be such as would be sufficient to a patent. [Parker *v.* Stiles, M'Lean, Nov. 1849.

An Improver upon an original patent has no right to use the original, nor has the original patentee a right to use the improvement without license. [1 Peters, C. C. 399.

Legitimate Combination is where two or more parts act together in a new way with a useful result.

Mechanical Equivalent means a substitute known to the art.

The Product of a patented machine is not patent property. [3 M'Lean, 296-7.

Patentees are required to mark each article made or vended under their patent (or where this is impracticable, to mark the package) with the word "patented," and the day and year. But infringers who have been duly notified are liable, notwithstanding the omission of such marking by the patentee. [Act 1861, Sec. 13.

Penalty of not less than $100 and costs is incurred for each fraudulent marking of unpatented articles with the word "patent" or like phrase, or for unauthorized use of a patentee's mark. [Act 1842, Sec. 5.

The Invention, if new and useful to the public, may be the result either of long experiment and profound research, or of a sudden and lucky thought, or mere accidental discovery. * * * Luck, labor or inspiration gives an equal right. [Tindal, C. J.

The law, essentially practical in its judgments, looks only to the fruits of the invention, and if it finds there the indispensable features of novelty and utility, it will presume a sufficient amount of invention to support a patent. [Holt, Com'r of Patents, Oct. 23, 1857.

The right to the patent belongs to him who is the first inventor, even before the patent is granted; and therefore any person who, knowing that another is the first inventor, yet doubting whether that other will ever apply for a patent, proceeds to construct a machine, of which it may afterwards appear he is not the first inventor, acts at his own peril, and with a full knowledge of the law, that by relation back to the first invention, a subsequent patent may cut him out of the machine which he has erected. [2 Wash. C. C. 345.

The first inventor has the prior right, if he had reduced the invention to a practical form by drawing or otherwise, and has used reasonable diligence in adapting and perfecting it. [1 Story, 590-596.

The invention itself is an intellectual process or operation, and like all other expressions of thought, can in many cases scarcely be made known, except by speech. * * The conversations and declarations of a patentee, merely affirming that at some former period he invented that particular machine, might well be objected to; but his conversations and declarations, stating that he had made an invention, and describing its details and explaining its operations, are properly to be deemed an assertion of his right at that time, as an inventor, to the extent of the facts and details which he then makes known. * * The invention may be consummated and perfect, and susceptible of complete description in words, a month or even a year before it can be embodied in any visible form. [14 Peters, 462.

There is no doubt that he who has discovered some new element or property of matter may secure to himself the ownership of his discovery, so soon as he has been able to illustrate its practicability, and to demonstrate its value. His patent, in such a case, will be commensurate with the principle it announces to the world, and may be as broad as the mental conception itself. But the mental conception must be susceptible of embodiment, and must, in fact, have been embodied in some mechanical device, or in some process of art. The abstract must be resolved into the concrete. The patent must be for a thing, not for an idea merely. [Kane, J. U. S. D. C., Pa.

Secret Use.—The inventor, who from selfishness, indifference or caprice, wishes to withhold from the enjoyment of his fellow citizens a discovery which he has made, must see to it, that in burying his secret, he preserves proofs of its existence, ready to be produced, whenever the action of another and more generous inventor shall summon him to the issue. [Holt, Com'r of Patents, Nov. 1858.

A Part Owner of a patent may, in the absence of any contract, assign his interest, or any fractional part thereof, or he may either alone or in company with others, purchase or make as many machines as he pleases, and may sell them to others with the right to use or sell them; or he may refuse to sell them, and may rent them; but he has no power to control the action of, nor to exercise any supervision over, a co-proprietor, nor to compel contribution of profits or losses, nor to enforce a partition of the right, nor is either party under any obligation to make the property profitable. Such parties must be regarded as having interests which are distinct and separate in their nature, though derived from the same instrument; and having such interests, with the right to use them separately, they cannot, for any legal use of them, incur any obligation to each other. [Chapman, J. S. C., Mass., 1864.

No models are required in European countries, but the drawings and specifications should be prepared with thoroughness, by persons who are familiar with the requirements and changes of foreign patent laws—agents who are reliable and well established.

Patents obtained in England, France and Belgium will secure the rights of an inventor among many millions of the most enlightened people on the globe; it is therefore very important, if the invention is valuable, to secure foreign patents.

Persons desirous of securing Foreign Patents, should send for our Special Circular relating to Foreign Patents, which will be sent free.

Employers have no claim to the inventions of their workmen, unless it can be proved that such employee was specially hired to bring out such inventions.

WHEN correspondents desire us to answer by express, they should so inform us, and enclose a franked envelope, when convenient.

☞Our Illustrated Pamphlet, from which the above is an extract, will be furnished free on receipt of postage stamp. Confidential advice given, and every legitimate branch of Patent Soliciting business promptly and faithfully executed, by

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New Mining Advertisements.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixth (6th) day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
E F Baldwin	2	260	$130 00

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of August, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on the twenty-third day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINOTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep11

Glenwood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 418 California street, San Francisco. je12

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Wednesday, the sixth day of October, 1869, and the sale thereof until Tuesday, the twenty sixth day of October, 1869. By order of the Board of Trustees.

sep11 O. D. SQUIRE, Secretary.

Hamilton Hydraulic Tunnel and Mining Company, White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Chas. H Latson	no cert.	800	$400 00
Edw Heathcote	no cert.	800	400 00
Hiram Rosekrans	no cert.	800	400 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of August, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, on the twenty-seventh day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep11

Kincaid Flat Mining Company, Tuolumne County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the fourth (4th) day of August, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
— Colburn	77	10	$25 00
— Colburn	80	10	25 00
James Nelson	31	10	25 00
James Nelson	32	10	25 00
I P Rankin	53	10	25 00
I P Rankin	54	10	25 00
I P Rankin	65	5	12 50
Wm H Sharp	35	10	25 00
Wm H Sharp	36	10	25 00
E S Tibbey	29	10	25 00
E S Tibbey	30	10	25 00
F Vassault	55	10	25 00
F Vassault	56	10	25 00
F Vassault	57	10	25 00
F Vassault	58	10	25 00
F Vassault	59	10	25 00
John Walker	78	10	25 00
John Walker	79	10	25 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth (4th) day of August, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. S. L. Jones & Co., auctioneers, 207 and 209 California street, on Saturday, the twenty-fifth day of September, 1869, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. H. CROWE, Secretary.

Office, 220 Clay street, San Francisco, Cal. sep11

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of September, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 408 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. sep11

Mining Notices--Continued.

Evening Star, No. 1, Silver Mining Company. Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of August, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the fifteenth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. au28

French Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A G Chauche	5	2100	$105 00
L Franconi	7	1150	57 50
L Franconi	9	1150	57 50
E M Dency	46	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of July, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No 502 Montgomery street, Room 3, on the thirteenth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

AUG. DUPRAT, Secretary.

Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. au28

Marlborough Silver Mining Company.—Location of Works: White Pine District, (formerly Lander County), State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A G Chauche	3	2100	$105 00
Louis Franconi	7	1150	57 50
Louis Franconi	12	1050	52 50
E M Dency	68	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 502 Montgomery street, Room No. 3, San Francisco, California, on the thirteenth day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

AUG. DUPRAT, Secretary.

Office, No. 502 Montgomery street, Room No. 3, San Francisco, Cal. au28

Silver Wave Mining Company.—Location of Works; White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of August, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. se4

Silver Sprout Mining Company.—Location of Works and Mines: Kearsarge District, Inyo county, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-seventh day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Brown, B L	11	10	$5 00
Cleaveland, R H	7	10	5 00
Devin, J D	12	10	5 00
Gillig, John	unissued	640	320 00
Hersl, George	unissued	200	100 00
Jackson, Otis	9	40	20 00
McLaughlin, J W	unissued	1000	500 00
McMillin, Thos	10	20	10 00
Moll, E B, Jr.	unissued	200	100 00
Wingard, A	unissued	1060	530 00
Williams, Mrs. Mery	16	80	40 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-seventh day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, California, on the twentieth day of September, 1869, at the hour of 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. sep4

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of August, A. D. 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 529 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURFEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. au28

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 439 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Friday, the seventeenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the seventh day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

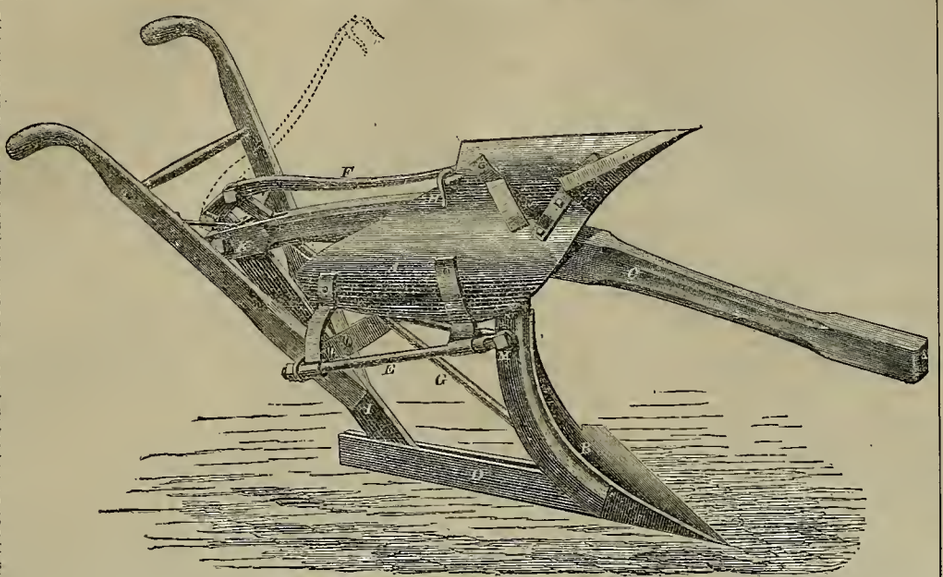
OEO. H RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. au14

STOCK CERTIFICATES,
STOCK TRANSFER JOURNALS,
STOCK LEDGERS,
ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the *Mining and Scientific Press.*

SCOVILLE'S CLIMAX SIDE-HILL PLOW.



The advantages claimed for this new Patent California Plow over others employed for similar work, consist in its being so constructed that the plow which is not in use is thrown up in such a manner as to rest its weight upon the beam, as shown in the engraving, where the plow A, is firmly held by the hooks upon the end of the iron arm, F. The weight of the upturned plow is thus made to aid in keeping the opposite plow to its work in the ground, while the balance of weight is so equally divided as not to give an excess on one side. Its position is also such that it does not in any way interfere with the plowing, and the person who holds the plow can see to handle it as readily as though the mold-board was not resting upon the beam. The handles are so arranged as to give to the holder a sure and easy control of the plow. The rod, G, is operated by the arm or lever, F, so as to lock the plow to be used in its proper position in the standard, by entering a slot in the toe of the land-side, D. When it is desirable to use a single plow (as on level ground) either of the mold-boards may be quickly removed by loosening the nut, M, and removing the rod, E, thus converting it into a single plow. The mold boards are hung upon two angularly-placed axles, one of which belonging to the plow not in use is shown at E, with its mode of attachment to the axis. The plow may also be used double, as for ditching, etc., by slipping a cap over the joint of both plows when in proper position. The mold-board being made of the best of steel, and of a peculiar shape and great acuteness of sheer, will free itself or scour in all kinds of soil, and requires fully twenty per cent less draft than any other plow of same size. It turns the soil so as to bury the stubble, and leaves the ground in a good condition for seeding. This Plow has been successfully introduced, the following parties, among others, already having them in use: J. J. Reed, Marin county; A. F. Scott, Centerville; George W. Shade, Watsonville; James McCormick, Pescadero; and J. J. Wood, J. B Gilchrist and J. E. Jones, of Spanishtown, San Mateo county, California.

TWO SIZES kept constantly on hand 10-inch and 12-inch cut, weighing 90 and 105 pounds. Price for each, $35, and with two extra Shares, $40. Will make any size to order. If, after a fair trial, the buyer is not satisfied, he can have his money back. Purchasers can depend upon every Plow being of good quality and make throughout.

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Machinists and Foundries.

McAFEE, SPIERS & CO.,

BOILER MAKERS

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Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

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Special attention given to Repairing Machinery.

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WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

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THE RISDON

Iron and Locomotive Works.

Incorporated, April 30, 1868. Capital, $1,000,000.

Location of Works, Corner Beale and Howard streets, SAN FRANCISCO.

Successors to Pacific Mail S. S. Co. Works at Benicia, Coffey & Risdon, and Devoe, Dinsmore & Co., San Francisco.

Steam Engine Builders, Boiler Makers,

MACHINISTS AND FOUNDRYMEN.

All work in their line attended to with promptness and dispatch.

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JOHN N. RISDON, President.

Joseph Moore, Vice President and Superintendent; Chas. E. McLane, Treasurer; Lewis R. Mead, Secretary; Lewis Coffey, Superintendent Boiler Works. 24v17-qy

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery.

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Foundry and Iron Works.

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MANUFACTURERS OF

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Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

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GLASGOW

Iron and Metal Importing Company

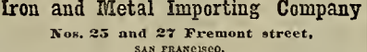
Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE. Manage.

PACIFIC FILE WORKS,



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Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

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FIRE-PROOF SAFES. BURGLAR-PROOF SAFES.

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MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand. Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the

1v17tf United States

G. T. PRACY.

MACHINE WORKS,

NOS. 109 and 111 MISSION STREET,

Between Main and Spear.

New and second-hand

Engines and Boilers,

FOR SALE.

Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

MANUFACTURER OF

Lathes, Drills,

And MILL MACHINERY of every description.

PRACY'S

New and Improved

STEAM ENGINE

REGULATORS,

The best and cheapest yet invented—manufactured and for sale. Parties are invited to examine it in practical operation.

F. A. HUNTINGTON'S

Shingle Machines

on hand.

Particular attention paid to Repairing.

☞ All work guaranteed to be done in a first-class manner, and at the lowest rates. 12v17tf

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Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,

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MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

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Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

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AGENTS FOR

Thomas Firth & Sons' Cast Steel,

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Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hausbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

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Between Third and Fourth, San Francisco.

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NEW FILES OF EVERY DESCRIPTION

ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19 qy

CALIFORNIA BRASS FOUNDRY.

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

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Manufactures Foundry Facings constantly, from choice coals: Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

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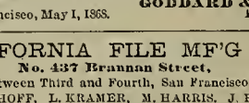

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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.

13v11

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LIGHT AND HEAVY CASTINGS,

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2tv17-qy **J. WEICHHART, Proprietor.**

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Pioneer Screen Works.

JOHN W. QUICK,

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Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

CHOLERA IN WATER.—A receat number of the *Standard*, has the followiug from Dr. Frankland: "It may be safely asserted, that the addition of cholera rice-water to the water of the Thames, in the proportion of 1 to 1,000, would not materially affect the results of the chemical analysis of the water. Thus the followiug experiments show two things: First, that water may become seriously contaminated with choleraic matter without the presence of the latter being indicated by chemical analysis; nnd, secondly, that water so contaminated is not completely deprived of this impurity either by tiltration or passago through nninal charcoal. On October 24th, 1866, a boy ten years of age was admitted into the Cholera Hospital, Commercial street, suffering severely from the prevailing epidemic. In about eighteen hours the youth died. Some of the rice-water evacuations of this cholera patient were collected, and came into the possession of Dr. Frankland. On being mixed with ten parts of distilled water, the flocculent matter which this fluid contained subsided, leaving an opalescent liquid above. One volume of the original rice-water was also mixed with 500 volumes of distilled water, and the mixture so formed was passed through filter-paper —a far more perfect filtration than nny which is available on a large scale. But the filtered liquid was 'still very opalescent,' proving that cholera matter still remained."

ROOFING TILES OF GALVANIZED IRON.—The *London Architect* thus describes a uew French roofing: "The coveriag is composed of separate tiles formed of galvanized iron, aud shaped somewhat like ordinary pantiles. The metal beiag thia, they are easily cut to fit a sloping line of roof, corners, etc.; and they are fasteued by a single nail of galvanized iron, with which is used a small leaden washer, to reader the nail hole perfectly tight. The advantages of such tiles are numerous. In the first place, they are not affected by fire, like zinc; they do not oxidize, and their dilatation aud coutractiou have no effect ou the roof."

A REFRESHING DRINK.—A tablespooaful of oatmeal, put into a large tumbler, or small jug, and filled up with clear, cold water, well shaken up and allowed to settle uatil the large particles of the meal fall to the bottom, forms a most refreshing drink in hot weather, and it quenches thirst more than any other. The iron puddlers, and other workmea, who have to bear the greatest amount of heat endurable by man, are always supplied with oatmeal water, both with satisfaction to themselves and masters. This fact deserves the attention of farmers and harvestmen.

The Excelsior Force Pump.

For all Purposes the Best.

ALL PUMPS WARRANTED.

BRITTAN, HOLBROOK & CO.,

AGENTS,

111 and 113 California St.,

SAN FRANCISCO.

9v19-2m

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IMPORTERS AND REFINERS

—OF—

Illuminating, Lubricating,

—AND—

PAINT OILS,

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!

An elegant and complete assortment.

SOLE IMPORTERS OF

Devoe's Illuminating Oil

PATENT CANS.

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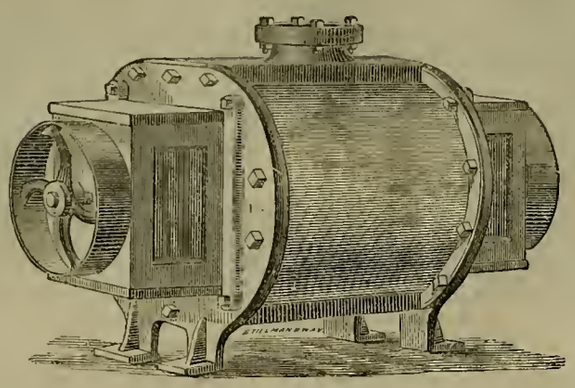
ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

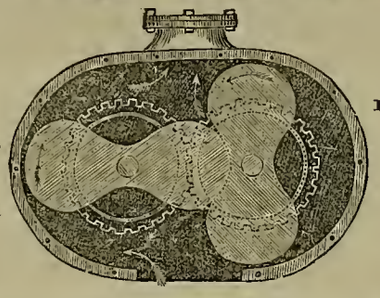
MANUFACTURED BY KEEP & BARGION,

At the Globe Iron Works, Stockton, California.



Awarded the First Premium at the Paris Exposition.

Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.



ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**

REQUIRES **Fifty Per Cent.** LESS POWER Than any Blower Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further informatioa, addrcss

KEEP & BARGION,

4v16 3m Globe Iron Works, Stockton, Cal.

Machinery.

VARNEY'S

PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setlers for themselves, at the office, **229** Fremont street,

1v1 San Francisco.

REBELLIOUS ORES.

THE HAGAN FURNACE.

The above method for the purification of Rebellious Ores is respectfully offered to the public. Repeated actual workings show that the

HAGAN FURNACE

Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

It has never been claimed for it that it will extract gold from ores which do not contain any of that metal.

Parties owning rich but refractory veins, can treat with the undersigned upon the basis of

GUARANTEED RESULTS,

With responsible security. For an interview, and all desired particulars, address

THE PACIFIC ORE CO.,

P. O. Box **1019**, San Francisco.

June 25 1869. 29v18-3m

Notice to Miners,

Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,

8v13-1y Stove Store, No. 1 Clay street, below Davis.

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

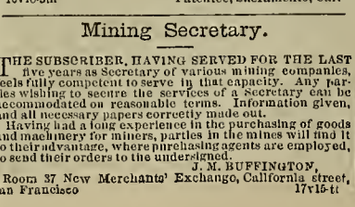
— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

CROSS' COMBINED

Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Splers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,

16v18-3m Patentee, Sacramento, Cal.

Mining Secretary.

THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.

Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.

J. M. BUFFINGTON,

Room 37 New Merchants' Exchange, California street, San Francisco 17v15-tf

GAS! GAS! GAS!

MACHINES!

THIS MACHINE,

MANUFACTURED BY THE

Boston Union Gas Company,

Is the result of several years of experiment and investigation, until to sum the whole, we can warrant a perfect machine.

It is Simple in its Action

AND THOROUGH IN ITS CONSTRUCTION.

It will last a lifetime; requires not more than three minutes's attention a day, to wind up the weight; generates gas just as fast as it is wanted, and stops making the moment you stop using it; gives the

Cheapest, Softest, and Most Diffusive Light

yet discovered. It will make abundant gas from a cheaper and lower grade of fluid than

ANY OTHER MACHINE IN USE,

and works in cold climates as well as warm. Only those who have used Gas Machines know what this means. Complete or partial failure in cold weather has destroyed confidence in them more than all other causes combined.

The Union Gas Machine entirely obviates this difficulty by a simple contrivance, patented and owned exclusively by this Company, and by which we warrant each and every Machine to operate successfully in winter or summer in any climate or country. It is the only Machine that claims to work outdoors in cold climates, and the only one that fulfills the requirements of the insurance companies without increase of risk. For country residences you save the breakage of lamps, and your lights are always clean. Away from the city, a Gas Machine affords one of the most pleasant and valued of city comforts. Of the advantages of Gas Machines, you pay for no more Gas than you actually consume. People sometimes imagine they do this with a machine. It is impossible; and the same amount of light will not cost one-half the cost of coal gas, besides being much more brilliant.

Where the pipe is already in the building according to the regulations required by the coal gas companies, or where parties wish the entire work of piping fixtures and furnishing, Machine, etc., by us, we will do everything and warrant everything.

The following card from Mr. Atkinson, 538 Market street, who has been THE FIRST TO INTRODUCE this light in this city, will be read with interest:

SAN FRANCISCO, January 25th, 1869.

MESSRS. D. SIMPSON & CO., Agents of the Pacific Union Gas Company, 117 Sutter street—Dear Sirs: I have for the past two months been using the light produced by the "BOSTON UNION GAS CO'S GASOMETER," now for sale by the PACIFIC UNION GAS COMPANY, and am well satisfied to continue using it. I find that it is equally safe as city gas, more brilliant, and less injurious to the eyes. I formerly paid to the Gas Company fully **100** PER CENT. MORE than it now costs me to light my premises. Any persons who may wish to introduce this Light can call at my store, No. 538 Market street, and I will satisfy them as to its economy and merits. JAMES ATKINSON.

ADDITIONAL REFERENCES

Given on application to

D. SIMPSON & CO.,

117 Sutter Street, San Francisco,

Agents for the Pacific Coast.

And we cordially extend an invitation to all owners or agents of other

Patent Gas Machines

To secure a place at the next MECHANICS' FAIR, where the public can have an opportunity of

INSPECTING AND TESTING

The relative merits of all the Gas Machines on this coast.

1v19-1am3m D. SIMPSON,

VORACITY AND STRENGTH OF YELLOW JACKETS.—It is astonishing to watch those troublesome insects, commonly known as "yellow jackets," and notice the heavy burdens which they will sometimes bear away upon the wing. They will often take up with their legs, pieces of fresh meat or fruit apparently equal in bulk to themselves, and fly off, with scarcely any diminution from their ordinary speed. They frequently prove very troublesome and destructive. The Oregon *Sentinel* says they have become a great pest in that vicinity the present season—so much so as to even attack the fruit upon the trees. The *Sentinel* speaks of an apple tree as having been almost stripped of its fruit by these voracious insects; while it is absolutely impossible to dry peaches or plums out of doors—as they are eaten up or carried away as fast as put out.

MANY TIMES MORE PEOPLE

WILL READ

YOUR ADVERTISEMENTS

—IN THE—

Mechanics' Fair Press

Than you can reach with your cards or circulars. It is the best, and consequently cheapest, advertising medium for the times.

Send in your advertisements at once, and you will be satisfied with the result.

The FAIR PRESS will contain 8 pages and 32 columns, printed and issued daily, free, in the Mechanics' Fair Pavilion.

DEWEY & CO., Publishers,
Proprietors Mining and Scientific Press.

PACIFIC

Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of
RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,
Embracing ALL SIZES of
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames
—ALSO—
HAMMERED IRON
Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention.
☞ The highest price paid for Scrap Iron 9v43m9p

Important to Assayers.

Crucibles.

The Patent Plumbago Crucible Co.,
Manufacturers of all kinds of
Melting Pots, Portable Furnaces,
CRUCIBLES, and other fire-standing Goods,
Battersea Works, London.

THE MORGAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; change of temperature has no effect on them; stand on the average forty to fifty pourings.

CERTIFICATES:

United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs. A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,
Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co.:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.
GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.
Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,
A. S. HALLIDIE & CO.,
18v18-9p 519 Front street, San Francisco

Seventh Industrial Exhibition of the Mechanics' Institute.

Opening Day, Tuesday, September 14th.

The Board of Managers of the Seventh Industrial Exhibition of the Mechanics' Institute announce to the public that the FAIR PAVILION ON UNION SQUARE will open on TUESDAY, SEPTEMBER 14, at 11 A. M., with the usual ceremonies.

The success of the last Fair was beyond the expectations of the Managers, and the satisfaction to the public was acknowledged by all. In the coming Fair, numerous additional attractions will be presented. Applications for space to exhibit have been received from foreign countries and the Eastern States, and the Managers confidently predict an Exhibition never equalled in California. Steam power will be furnished necessary to drive all machinery.

The Pavilion has been improved in many respects, and now covers an area of 90,000 feet. A new gallery has been erected, and additional decorations will be employed. The Pavilion at night will be illuminated by 1,300 gas jets, presenting a magnificent spectacle.

A celebrated band has been engaged for the entire period of the Fair.

The restaurant and refreshment department will be in competent hands.

Admission:—Season ticket, admitting a gentleman and lady, $5; season ticket, admitting single person, $3; single ticket, 50 cents. Children, half price.

A. S. HALLIDIE, President.

Mechanics' Fair Daily Press---Fourth Volume.

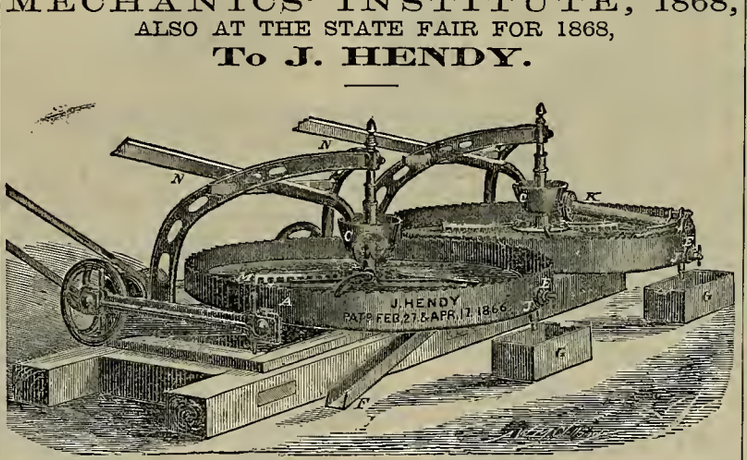
Spicy and Interesting Sheet---The best Advertising Medium ever offered in San Francisco.

Eight pages, profusely illustrated, and furnished free to every Exhibitor and Visitor during the season of the Fair—from four to five weeks. Copies sent abroad to friends everywhere, containing description of the Fair.

Secure your space and hand in your Advertisements early. Advertisements Engraved to order, or set in fancy type, to suit patrons, who will be rendered all assistance desired in getting up their notices. Orders received through agents or at the office.

Our three previous volumes have given patrons the best satisfaction of any advertising medium on the coast. *We have the exclusive privilege for newspaper advertising in the Fair.* DEWEY & CO., Publishers, 414 Clay street.

PREMIUM FOR BEST CONCENTRATOR
AWARDED BY THE
MECHANICS' INSTITUTE, 1868,
ALSO AT THE STATE FAIR FOR 1868,
To J. HENDY.



A LARGE NUMBER OF THESE
IMPROVED CONCENTRATORS
ARE IN PRACTICAL USE ON THE PACIFIC COAST.

MR. HENDY, by diligent and practical application, has improved his Concentrators until they now stand unrivalled, far in advance of any yet brought to public notice.

By recent alterations in the patterns for these machines, they are now made

Stronger and more Durable than Ever.

OFFICE OF NORTH STAR MINE, GRASS VALLEY, NOV. 12, 1868.

JOSHUA HENDY, ESQ.—Dear Sir:—I take pleasure in certifying to the efficiency of the two last Concentrators ordered from you. We have run them steadily since July last, with but a very trifling expense for repairs. The additional length of step is a decided improvement. The first six sent to us have run steadily for nearly nine months, and are still doing good work. * * * The concentrations from the eight pans alone much more than pay our entire surface expenses. Without them we should lose a large proportion by any system of concentration now in use. The eight Concentrators receive the pulp from our 24 stamps, which are crushing 1,040 tons per month. Our sales of Sulphurets last month amounted to 70 tons, or nearly 7 per cent. of the mass crushed. The sulphurets from the reconcentration, contained about 10 per cent. sand. In addition to their properties as concentrators, they have done us good service as amalgamators, they having saved us the past month 50 ounces of hard amalgam, worth $350, which otherwise would have been lost.

Respectfully yours, J. H. CROSSMAN, Supt. N. S. Mine.

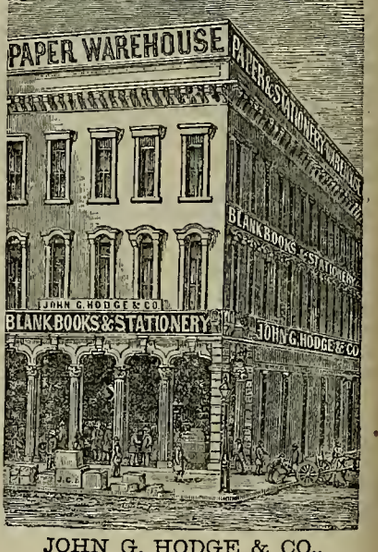
J. HENDY, Patentee.
Office at Union Iron Works.
13v17tf

W. T. GARRATT,
City
BRASS AND BELL FOUNDER

Cor. Mission and Fremont sts.,
SAN FRANCISCO.
Manufacturer of Brass, Zinc, and Anti-Friction or
Babbet Metal Castings;
CHURCH AND STEAMBOAT
BELLS,
TAVERN AND BAR BELLS AND GONGS.
FIRE ENGINES, FORCE AND LIFT PUMPS
Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Speller, Solder, and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,
HYDRAULIC PIPES AND NOZZELS
For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."
☞ Highest Market price paid for OLD BELLS, COPPER AND BRASS. ☜ 6tf

N. W. SPAULDING,
Saw Smithing and Repairing
ESTABLISHMENT.

Nos. 17 and 19 Fremont St., near Market,
MANUFACTURER OF
SPAULDING'S
Patent Tooth Circular Saws.
They have proved to be the most durable and economical Saws in the World.
EACH SAW IS WARRANTED IN EVERY RESPECT,
Particular attention paid to construction of
Portable & Stationary Saw Mills.
MILLS FURNISHED AT SHORT NOTICE,
At the lowest Market Prices.



JOHN G. HODGE & CO.,
Importers and Wholesale Dealers in
STATIONERY,
Blank Books, School Books,
PLAYING CARDS,
Wrapping Paper, Paper Bags, etc., etc.
BANKS, COUNTING HOUSES, ETC., SUPPLIED.
Nos. 329 and 331 Sansome street, corner Sacramento
☞ Special attention given to orders from Country Merchants 2v16cow-16p

Sheffield Scientific School
Of Yale College, New Haven, Conn.

This department of Yale College, instituted in 1840, and endowed with the National Land Grant in 1866, furnishes advanced instruction in the various branches of Mathematical, Physical, and Natural Science.

The School is under the direction of the President of the College, a Board of thirteen Professors in different special ties, and six assistant instructors.

Regular courses of study, leading to the degree of Bachelor of Philosophy, conferred by Yale College, are arranged as follows: 1—CHEMISTRY AND MINERALOGY. 2—CIVIL ENGINEERING. 3—MECHANICAL ENGINEERING. 4—MINING ENGINEERING AND METALLURGY. 5—AGRICULTURE. 6—NATURAL HISTORY AND GEOLOGY, and 7—SELECT COURSE.

Advanced students are also admitted to optional courses, and if already College graduates, are received as candidates for the degree of Doctor of Philosophy.

Tuition, $125 per year of forty weeks.

The Libraries, Museums, Laboratories and Apparatus, accessible to students, are varied and extensive.

For copies of the Annual Circular and Report, letters may be addressed to the "Secretary of the Sheffield Scientific School," New Haven, Conn. 13v6-1y16p

MINING AND SCIENTIFIC PRESS.

Subscription, $5 Per Annum. Single Copies, 12 1-2 Cents.

A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, SEPTEMBER 18, 1869. VOLUME XIX. Number 12.

Our National Pride, our Industrial Greatness.

The Capitol, with its sublime dome completed, with its great wings, and presided over by a colossal statue of Liberty—our land of a thousand great rivers, of uncounted horizons full of lofty mountains, embracing between them a continent which is bounded by the two great oceans of the World; an undivided Union, with a form of government as strong and enduring as the liberal principles on which it is based; our chief national characteristic and pride, the passion to triumph by our ingenuity over matter; our present glory the mastery of time and space by means of electricity and steam, which are our very playthings. These texts cannot fail to elicit a flow of glorification in one's breast, upon the grandeur of the Present.

Perhaps America, which we love always to regard as the

"Home of the free and the land of the brave,"

has attained, however, in these very days, the climax of her greatness; for great may be our future, and yet posterity will look back to these times as those of our most vigorous, world-acknowledged, self-conscious though unproclaimed, true national greatness, in placing ourselves in a picture of the history of nations.

No earthquake is likely, we feel confident, on the other hand, to topple down the nation's walls and capitols. Centuries will pass in prosperity, perhaps in peace, with here and there only a little turmoil of politics.

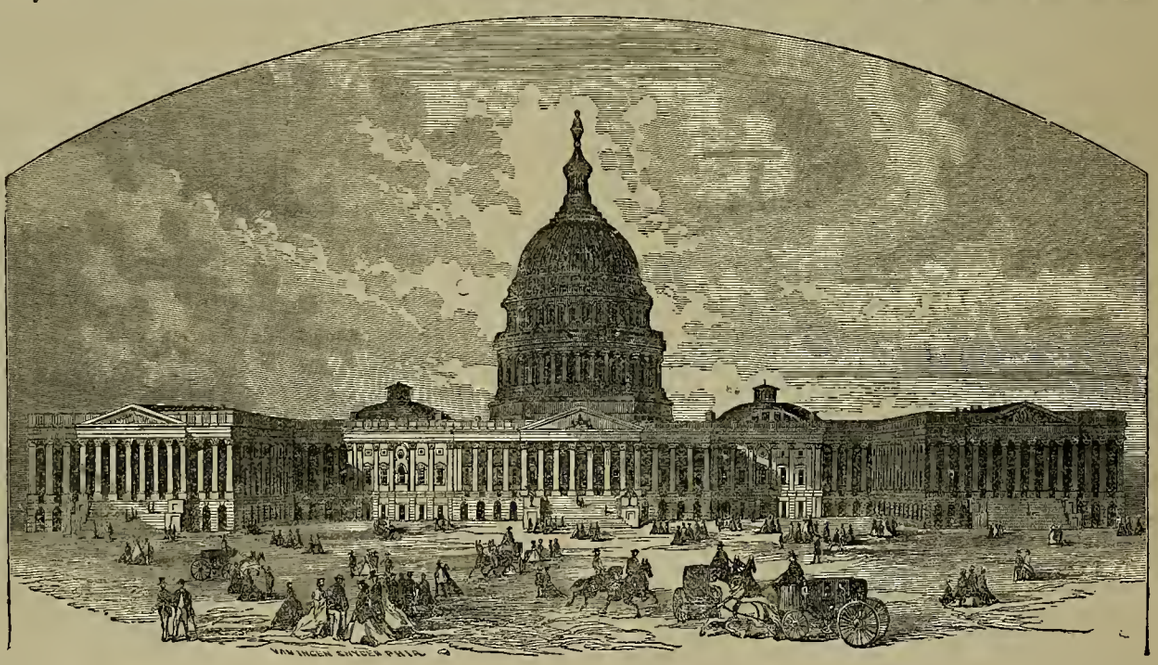
As you walk through our little Fair by the "sunset gate," remembering our triumphs, and noting the thousand evidences here displayed of inventive progress, reflect and glorify with all your soul in the greatness of to-day. This is *our* day; we live and move unconsciously in a Homeric age; our every-day life, our soil, and our pursuits, are steeped with romance and heroism.

The entire nation is represented here in this celebration of the westward march of Civilization and the Arts. The three golden links of Odd Fellowship constitute the motto of the occasion. We are incited to the cultivation of our finer fancies in our enjoyments; we are led by every visible object here to a study of problems of political economy and trade, of demand and supply. Such are the features of the Fair.

Our national structure is a temple of progress, both moral and material—from a personal and religious absolute independence, to a higher individual perfection in men. Our national greatness and pride is to enact a career of industrial and inventive progress worthy of that wonderful conception and mechanism Man.

The accompanying view of the National Capitol will remind those who have threaded the aisles of the department palaces at Washington of the fostering care that our legislative department has ever paid to devices suggested and brought forward for material progress. No other government that exists so warmly encourages invention and protects the inventor; no other country displays such numbers of well thought out and such ingenuity of inventions, as meet the eye of a visitor to the great United States Patent Office.

While our National Capitol serves as the appropriate text for these cursory remarks, let us add a few facts which should be generally known concerning the building:



THE NATIONAL CAPITOL, AT WASHINGTON, D. C.

The Capitol fronts the east, and stands on a plateau ninety feet above the level of the Potomac, in latitude 38° 55′ 48″ north, and longitude 77° 1′ 48″ west from Greenwich. The southeast corner-stone of the original building was laid on the 18th of September, 1793, by President Washington, aided by the Freemasons of Maryland. It was constructed of sandstone from an island in Acquia creek, Virginia, painted white, under the direction of B. S. Hallett, and afterwards of B. H. Latrobe, architects. The north wing was finished in 1800 and the south wing in 1811, a wooden passage way connecting them. On the 24th of August, 1814, the interior of both wings was destroyed by the British, but they were immediately rebuilt. In 1818 the central portion of the building was commenced, under the architectural superintendence of Charles Bulfinch, and the original building was finally completed in 1827. Its cost, including grading, up to 1827, was $1,746,717 33. The corner-stone of the extensions to the Capitol was laid on the 4th of July, 1851, by President Fillmore, Daniel Webster officiating as orator of the day. Thomas U. Walter was architect, and subsequently Edward Clark, under whose direction the work was completed in November, 1867. The material used for the extensions is white marble from the quarries at Lee, Massachusetts, with white marble columns from Cockeysville, Maryland.

The dome of the original central building was constructed of wood, but was removed in 1856, to be replaced by the present stupendous structure of cast-iron, which was completed in 1865. The entire weight of iron used is 8,009,200 pounds.

The main building is 352 feet long in front and 121 feet deep, with a portico 160 feet wide, of twenty-four columns on the east, and a projection of 83 feet on the west, embracing a recessed portico of ten coupled columns. The extensions are placed at the north and south ends of the main building, with connecting corridors, forty-four feet long by fifty-six feet wide, flanked by columns. Each extension is 142 feet in front, by 238 feet deep, with porticos of twenty-two columns each on their eastern fronts, and with porticos of ten columns on their ends and on their western fronts. The entire length of the building is 751 feet, and the greatest depth, including porticos and steps, is 324 feet. The area covered by the entire building is 153,112 square feet. The dome is crowned by a bronze statue of Freedom, modelled by Crawford, which is nineteen feet six inches high, and which weighs 14,958 pounds. The height of the dome above the base-line of the east front is 287 feet.

The legislative department of our National Government, in which the Pacific States are, of course, fairly and fully represented, will, at the coming session of Congress, devote far more than usual, and special attention—with the aid of due enlightenment from personal visits by members—to the mining, the lauded, the industrial and commercial interests of the transmontane West. Mining titles, mining laws, agricultural lands in mining regions, Mongolian emigration, manufacturing incentives and premiums, reciprocity relations with our Pacific neighbors—these are questions the handling of which will prove of mighty influence upon the welfare of our communities. Our national representatives, so far as we remember them, are: Cole and Casserly, Senators; Axtell, Johnson and Sargent, Congressmen for California; Stewart, Nye and Ashley, for Nevada; Geo. H. Williams, Henry Corbett, and Joseph S. Smith, for Oregon; Garfield, for Washington Territory; Holbrook, for Idaho; McCormick, for Arizona.

THE FIRST FAIR OF THE INSTITUTE was held twelve years ago, in a building erected for that purpose on the block now occupied by the Lick House, on Montgomery street. Each subsequent Exhibition of this useful and enterprising Institution has shown a steady increase and importance. The present display will hardly be complete before the end of the week; yet it is constantly thronged with crowds of eager, curious visitors. There will doubtless be an unusually large attendance of strangers the present season, from the interior, on account of the improved facilities now presented for traveling. We have now practically three railroad lines, reaching San Francisco from points radiating in various directions to almost every section of the State, each of which, as well as the steamboat lines, affords cheap and rapid access to the city.

APPLES, of all other fruits, are found in the greatest number of varieties. It is said that not less than 10,000 different varieties have been produced, although in some cases the distinction is very slight, and perceivable only by those most intimately conversant with such things.

OPENING ADDRESS

Delivered by Irving M. Scott, Esq., *in the Pavilion of the Mechanics' Institute, at the Opening of the Industrial Exhibition, September 14th*, 1869.

In arts, sciences and mechanical inventions, in manufacturing progrese, we bave our days of review—landmarks by wbich we observe every deviation from the usual path, every innovation upon established usage. Taking a hint from tbe past, courage from the present, we boldly strike into tbe future, with full faith that the result of our efforts will lift us above the plane of the past. This is the day set apart for us to review tbe victories of art, discoveries of science, and the advancing steps of invention; this is our commencement day, to notice the progress and improvements, perfection and convenience of our age; this spacious building, crowded with the trophies of peaceful labor, speake with the eloquence of action, the earnestness of our civilization. From these yearly comparisons, these mile stones of progress, we note the onward march of events. This day, for another and higher reason, should be the inspiration point for art and science to buckle on their armors and go forth to nobler conquests. One hundred ycars ago, at the Castle of Tegel, was born the great scientist, the explorer of tbe earth's surface, the expounder of the underlaying and overlying strata of its crust, the father of physical geography, the author of Cosmos, blending naturalist, artist, geologist and traveler in a wonderful degree. Humboldt is the Colossus on the field of scientific labor. His was a lifetime of work—and, measnred how we may, is unparalleled. Thoughts and ideas which he started, gathered strength as time sped, until he received the homage of the world. The years siuce his birth are crowded with the grandest achievements of man. [At tbis point the speaker paused, and the bust of Humboldt was unveiled, amid great applause.—Rep.]

Six years later, the Declaration of Independence tbrilled the heart of the world. In this democracy, arts and science received an impulse which carried them up to high-water wark. Steamboats, railroads, telegraphs, sewing machinee, cylinder presses, and a host of beneficent inventions came crowding from the brain of a Republic in which all men are equal.

We are celebrating our Seventh Exhibitiou in the Queen City of the Western slope,—a city whose foundations, rocked by earthquakes, washed by the waters of an ocean freighted with the richest memories of the oldest civilization, holding in her lap the wealth of continents, tied to the Occident with indissoluble bands of commerce and self-interest, and to the Orient with bands of steel aud a common ancestry, in whose harbor may float the navies of the world,—a city full-fledged, where all was primeval nature when Humboldt looked from Chimborazo's peak in 1802.

So rapid and marvelous has been thie growth, that the mind ecarce comprehends that half a continent has been reclaimed from savage rule, filled with people, interlaced with iron ways; and this, its outpost on the westward march, just nineteen years old, changing the current of exchange, dividing the world's commerce, and carrying the banner of progress "full high advanced." Seventeen hundred and sixty-nine was the date of Arkwright's first patent for a cotton spinner. Now one man spins more yarn than four hundred could in Arkwright's day.

As much flour is made by one man now as one hundred and fifty could make a century ago.

One woman makes as much lace as one hundred did in seventeen hundred and sixty-nine—and wears it too!

Sugar is refined in as mauy days as it once took months.

One hundred years ago, it took six months to fix quicksilver to glass; now forty minutes!

The tedious days of the sickle, followed by the flail,

"Throbbing mellow music down the vale,"

winnowed by the winds of heaven; the gleaner Ruth and the threshing floor of Boaz have passed away for a machine to the "manor born," which cuts, threshes, cleans and sacks the grain from twenty acres a day.

This progress is solicitous of man's comfort. In 1569, a bath of boiling oil was applied after amputation — a custom as barbarous as the age was uncouth. Theu came "reform and chlorcform," when every faculty rested, and the patient roused from slumber to find the dreaded deed done. Science, ever watchful, ever advancing, turns another page; freezes the parts operated on, with brain, heart, and nerves in full play; the patient, an observer of painless amputation, himself the subject.

In medicine, the days of blood a pint, and physic a quart, yield to reason and a knowledge of the laws of health. The "ounce of prevention" is recognized as the fundamental principle.

The age is liberal—the martyrdom of Latimer and Ridley is replaced with the unity of sects in the advancing march of Christian progress. In our infancy, Salem jail was crowded with suspected witchee, and Cotton Mather hurled his invectivee at Corey, whose four score years could not save him from death.

Less than a hundred years ago the terrors of the Cock Lane ghost shook England's faith to the center. *Now*, the iconoclast,—the common school,—knocks tbe idol of superstition to pieces; planchette is a household toy, painting the faces of absent spirits. And wbo's afraid?

Thirty-eight years ago Professor Low, of St. Joseph College, Bardstown, Kentucky, was dismissed for writing a pamphlet advocating a national railroad from the Atlantic to the Pacific. The Faculty judged him insane. *Now*, from this very city, we can step into a Pullman palace car, furnished with regal luxury, carrying our own provisions, travel across valleys, climb mountains, span rivers, and neither change cars nor stop for three thousand miles—over one country, having one language, protected by one flag;—and the builders of this enterprise we call tho ropresentative men of our day.

In eeventy-eight days of pleasure we can follow the sun around the world to our point of starting—instead of thirty-six months of tedious travel—carrying with us the condensed luxuries of tho land, and send our thoughts home on swift-winged messengers, the final result of Franklin's experiment—

"Through the shadows of the globe we sweep into the younger day;
Better fifty years of *our time* than a cycle of Cathay."

When we see the tenderness and liberality of to-day—the economy of time, of space, of machinery—we might think that half the world is idle. Progress has increased the demand for men, after all the improvements of labor and lahor-saving machinery. So rapidly have new fields and enterprises been devcloped, under the fostering hands of Art, Science and Invention, that not only has the demand for the individual increased, but ideas have become valuable. "A penny for your thoughts," says the old saw. Thoughts are worth more than pennies now, and ideas suggested hy thought are worth millions.

The man who caught the idea of making screws, gimblet-pointed, controls that commodity in the markets of the world. The man who got the idea of the clothes wringer, made money. The idea of making pins with eolid heads and rolling the points, overturned all England had contributed to that branch of industry, and made New England the pin's point of the world. The ideas of condensed milk, of condensed fruits, of the swinging cigar lighter, blacking boxes with wooden bottoms, wooden fruit boxes and sticking machines, led their inventors to the golden beam all men seek.

A peuny for your thoughts! For ideas that are shaping the world, uo more to be measured by a mercenary standard thau the influence of the sun or the blessing of free air.

The eye of the needle at the point—an idea conceived by Elias Howe—made the sewing machine possihle. We are all familiar with this household god, which lessens the labor of those we love, and have followed its shuttle, feed, hemmer, tension, tucker and stitch, through all improvements, until we behold a machine that will sew with harmony and precision seven hundred etitches a minute; too stupid to make a mistake! But it takes sixtcen seeonds to thread the needle,—a loss of time and labor which could not be afforded. A woman conceived the idea, and exhibits in this building, as her contribution to mechanical progress, a needle that can be threaded in less than a second—threaded without looking at it; threaded in the dark! Two years elapsed from the conception to the practical application of the idea, during which time many experts were consulted. Finally a sou of Asia applicd the idea, and we have the open-eyed needle of Mrs. Suplee, which is to the machine of the future what Howe's was to the machine of the past. The brain of a Caucasian, tho muscle of the Mongolian—prototype of what is to be—co-workers recording deeds of usefulness, the measure of which will enlarge their spheres,

Time is precious. Seven hundred stitches a minute is not enough. Progress is ameliorating. The physical effects, the fatigue of the treadle, must he abated. Stevens hears the cry, touches the lever with electricity, and quicker than thought twelve hundred stitches a minute respond. Feet unoccupied, treadle dispensed with. This open-eyed needle, driven by the subtle fluid, with its music of twelve hundred stitches a minnte, is California's reply to Hood's Soug of the Shirt.

The presence of a star is needed to explain a bend in the earth'e orbit. Astronomers' telescopes sweep the heavens until it is found—a star whose undimmed luster shone steadily from the beginning—undeveloped resources, hiddon for centuries, are discovered at the call of progress. Mines which have yielded tin for past centuries, now decreasing in quality and quantity, increasing in cost, until increasing demand paid double price, and yet not enough. While this decay was taking place in one part of the globe, to preserve nature's equilibrium, California was discovered, settled, prospected, and the tin mines of San Jacinto laid bare—lodes which yield 60 per cent. oros—a deposit that will change the current of tinwares, and make Temescal what Cornwall has been. This, the first exhibit of tin ever produced in the United States, was crushed, concentrated, smelted, run into pigs and bars, made into sheets, manufactured into tinware,—all done with California inventions in the city of San Francisco.

Slate, another article exhibited for the first timo as a product of this State, lay undisturbed, though trodden underfoot by the ceaseless throng who searchcd our placers, and worked our copper mines.

Inventors supplying with wonderful success, crushers, quartz mills, amalgamating pans, concentrators, smelting furnaces,—separating tho precious metals from obdurate matrices, with economy and speed, giving to the world a metallurgy peculiarly Californian; lead works making shot and pipe; woolen goods second to none; wooden wares supplying every want of this coast; rolling mills ready for the worn rails of a national road; foundries and shops capable of building sewing machines, or launching monitors; engineers bridging rivers, crossing mountains; leather factories furnishing soles to the solcless; native artists reproducing our varied seenery with fidelity; photographers, whose art makes the sun paint their pictures; inventors teeming with thoughts and ideas to meet this devcloping age; capitalists open-handed, moro liberal thau elsewhere;—all these and a thousand more meet our inquiries in the field of manufacture.

One million acres out of forty millions under cultivation, producing 14,080,752 hushels of wheat, 11,605,922 buehels of barley, 1,864,379 bushels of oats, 4,449,835 pounds of butter, 2,110,058 pounds of cheese, 5,229,826 pounds of wool, 1,983,068 bushels potatoes, 1,791,633 gallons of wine, more than 200,000,000 feet of lumher, 400 pounds of cocoons—three threads of their silk equaling five threade produced elsewhere, and the advantage of greater length—to say nothing of fruits and numerous other eources of wealth—meet our inquiries in the field of agriculture.

This developmeut in mines, mechanics, and agriculture, with only one-fortieth of our land uuder cultivation, of a State not yet out of its teens, shows the need of "hewers of wood and drawers of water." We need them, and will absorb them as the parched soil does the Octoher rains; after which, instead of valleys seared, bedrocks bared, farms desolate, the green grass springing from every nook and corner, will he an answering benediction to this priceless gift.

When our rivers, ewecping down their rugged channels, shall be checked by the hand of art; when the virgin soil of our valleys is turned with the plowshare; when our forests yield their treasures; when our hillsides, clustering with grapes that rival those of famed Escol, and yield a vintage purer and better than France or Spain; when the din of occupation resounds from every square mile of our inheritanee, we will absorb any immigratiou that may come here, *turn it into channels of trade, teach it to carry our burdens, and make it the element of our strength.*

The people who are here and who are to come, and their children, must be taught. Our public schools supply all that a common education requires; the College of California will supply the classics. The Agricultural College will teach the science and chemistry of farming. There are special callings that must be taught by special institutione.

It is the mission of the Mechanics' Institute to promote whatever is conneeted with the mechanic arts. The young inventor must be encouraged; the aspiring mechanic must have his ideas enlarged; the metallurgist must be provided with the laboratory, where practico shall accompany theory; tbe draftsman must be supplied with models and made proficient with lines and shades;—the worker must have the condensed progress of the age set before him, the laborer ueeds the refinement of intellectual exercise, and the community these exbibits of mechanical progress. All these the Institute will supply as the means contributed by a generous public will permit. From rented rooms and borrowed books, from days of adversity, it has grown, and uow owns its building with a library of fifteen thousand volumes, reading-room, chess-room, lecture hall, class of drawing, and polytechnic branch, before which are read papers on different subjects closely allied to mecbanics. If pecuniarily successful, wo intend to add a course of popular lectures, a branch of metallurgy, a class of chemistry—expanding every year as funds will permit. Since the 29th of March, 1855, this institution has steadily increased in power and usefulness. Its present flattering condition is the result of arduous labor and fidelity to the law of progress; recognizing merit free to competition—no restriction save good behavior. Encouraged by tbe past, with your support in the future, our motto shall be—

No dread of toil have we or ours;
We know our worth, we weigh our powers.
The more we work, the more we win.
Success to trade!
Success to spade!
And the corn that's coming in!
And joy to him who o'er his task
Remembers toil is nature's plan;
Who, working, thinks,
And never sinks
His independence as a man.

State Fair.

An attendant throughout the whole of the State Fair at Sacramento writes us the following: "At the Park the attendance has been large all the week. Much fine stock of all kinds has been on exhibition, and horse racing and gambling have, beyond cavil, heen more thoroughly represented than anything else.

At the Pavilion bnt little interest has been taken. There was probably not more than one-half as much on exhibition as last year. Tho steam engine placed there for the purpose of attaching to and working the machinery on exhibition, I think has not in any case been used.

For the eveuing promenade or a speech each evening, the Hall answered a good purpose; but for the purpose of exhibition a change will have to be made to induce exhibitors to attend better. It might be helped by placing everything *in the Park*, so that the little time between the races could be occupied by the public in attention to their other interests. Unless something is done, I fear that Sacramento State Fairs will soon run entirely to racing, and San Francisco will absorb all other fair interests. Observer.

Sept. 11th, 1869.

The Purity of Ice.—In addition to the fact that ice is lighter than water, there is another curious thing about it which many persons do not perhaps know—namely, its purity. A lump of ice melted will become pure distilled water. Water in freezing turns out of it all that is not water—salt, air, coloring matter, and all impurities. Frozen sea water makee fresh water ice. If you freeze a basin of indigo water, it will make ice as clear and as white as that made of pure rain water. Wheu the cold ie very sudden, theee foreign matters have no time to escape, either by rising or sinking, and are thus entangled with the ice, but do not make any part of it.

Wheat Bran.—If chemistry has rendered no higher service to common life than to analyze our daily bread, it would have placed society under perpetual obligation. It is now generally understood that in bolting ground wheat the seive takes out the best and most nutritious parts of the grain. A process of lato bas been patented in England for grinding the hran into fine powder and mixing it with the flour. A Gorman chemist has discovered a method by which bran may be bleached entirely white so as to be cooked with the flour, thus adding to its nutritive power without affecting its color.

When is a tombstone liko a rushlight? When it is set up for a late husband.

What bar is that which often opens but never shuts?—A crowbar.

Mechanical Progress.

A Notable Centenary.

Our column of "Mechanical Progress" cannot more appropriately be opened, this first week of the Mechanics' Institute Fair, than by calling attention to the fact that this year is the centenary of WATT'S STEAM ENGINE.

In 1765, James Watt, a mathematical instrument maker, conceived an idea. It was that of a separate chamber for the condensation of the steam in the old New Comen engine. This happy inspiration, this suggestion of inventive genius, which has so materially modified the world's subsequent history, this beginning so magnificent in its results, took form and realization just one hundred years ago. In 1769, after four years of struggle with mechanical difficulties, such as even the workshop apprentice of our day, with his more perfect appliances, never dreams of, Watt set in motion his first engine. A well-fitting piston and cylinder were at that time out of the question; yet the machine, clumsy as it was, served to demonstrate his point. That machine is at this day essentially the same thing as when it left the hands of its illustrious projector. For proofs of progress in mechanical execution, we need only point to the exquisite specimens of such works now on exhibition at the Pavilion.

New and Convenient Battery for Blasting Purposes.

The *American Exchange and Review*, for August, describes a little pocket battery which apparently has capabilities worthy the notice of mining engineers. It is circular, about six inches in diameter, and one inch thick; and by simply turning a small handle like that of a tape measure, a gutta percha disk within is made to revolve against oiled silk, causing sufficient friction, with ten turns, to produce a spark which will ignite a small cartridge at the end of a double wire. The journal aforesaid says this little instrument was used in firing the cannon at the Boston musical festival. It acts with perfect promptness in blasting under water.

STEEL OR IRON?—A change seems to be taking place to some extent, in the opinions of mechanics and engineers on the above question. There was a time when steel having become comparatively cheap, there was a loud urging of its use for everything,—guns, rails, boilers, bridges and ships; but this is now modified. Sir Wm. Armstrong, who, says *The Engineer*, at one time persistently uttered the cry, in a recent address, used the following words: "The conclusion at which I have long since arrived is, that although steel has much greater strength than wrought iron, it is less adapted to resist concussive strains. * * The want of uniformity continues to be another serious objection to its use." The journal alluded to above, concurs in this opinion; and thinks that the use of steel will not greatly extend beyond its present limits.

SORTING ATTACHMENT TO BLAKE'S BREAKER.—The London *Mining Journal* illustrates an addition to Blake's Breaker which has been made by Mr. Marsden, the English agent. It is a horizontal revolving circular table, which receives the crushed ore from the breaker, and passes it in front of boys who sort it for working. We quote: "The stone-breaker is fixed in the usual manner, except that when necessary it is raised a little higher than usual, and to the front of the machine a stout iron bracket, which carries the top bearing of an upright spindle, on which the picking table rotates. Rotation is communicated to the table by band and pulleys, from the same main shaft that drives the stone-breaker, the change from horizontal to vertical rotation being effected, as usual, by means of a mitre-toothed wheel and pinion. The size of the table and speed of rotation can, of course, be so arranged as to leave ample time for separating the ore from the refuse. But very little power is required to rotate the table, and the effect of the arrangement is that practically the ore supplied to the breaker is not only broken but thoroughly picked before it leaves the table.

Ventilation of Mines.

The recent frightful destruction of life at Avondale, Pa., solely attributable to the fact that a furnace was used for ventilating the mine, makes one ask why it is that a furnace is used for this purpose instead of mechanical apparatus? Is it for economical reasons? Would not the same amount of coal, if used for making steam, drive the fans necessary to gain the same end? While considering this point, we met with a paper upon the subject, which was recently read before the Institution of Mechanical Engineers, at Newcastle, by Mr. William Cochrane, and reported in *The Engineer* of August 13th. We give here some extracts:

"It is considered a fair estimate of the economic value of the average conditions in which furnaces are worked that only one-fifth of the heat due to the combustion of the coal is utilized. There are many objections, besides the small useful effect, to the use of a furnace, which cannot be overcome, and which form a constant source of cost attendant upon it, namely, the necessity of cleaning the flues and the consequent suspension of the active ventilation of the mine; the inconvenience, and in some cases the impossibility, of using a shaft highly heated, and often full of smoke, for any other purpose than as a ventilating shaft; and the serious damage done by the products of combustion to cast iron tubing, timber, pumps, or wire ropes, where winding is carried on in the upcast shaft, especially where the shaft is damp. If the conditions are unfavorable for the use of a furnace, such as shallow shafts and heavy resistances to be overcome, the furnace then is quite unable to compete with a good mechanical ventilator in economical effect. In a table compiled by Mr. J. J. Atkinson, Government Inspector for the Durham coal-field, has been shown the depth at which furnaces are estimated to be equal to ventilating machines in point of economy of fuel, assuming that the sources of loss are of the same extent in each case, that is, the loss of fuel in furnacee by cooling in the upcast, and in ventilating machines the power expended in overcoming the useless resistances, and that the ventilating machines utilized 60 per cent. of the engine power. A recent calculation by M. Guibal, of Mons, deduces the following comparisons: That if a furnace in a 12ft. shaft, 400 yards deep, circulate 53,000 cubic feet of air per minute under the total resistancee represented by 3½in. water gauge, and an average excess of upcast temperature of 108 deg. above the downcast, with a duty of 31lb. of coal per horse-power in the air estimated on the total resistances, then a mechanical ventilator, utilizing 60 per cent. of the power employed would, under the same conditions, have a duty of 11 lb. of coal per horse-power on the air, being a saving of 64 per cent. At a depth of 550 yards to circulate the same volume, the duty of the furnace being 22 lb. of coal, that of the mechanical ventilator would be 11 lb., being a saving of 50 per cent."

AUTOMATON ALCOHOLOMETER.—This is to measure spirit for taxation purpoees as it leaves the still. It is the invention of Dr. Siemens, of Berlin. The London *Artizan* describes it thus: "As the spirit leaves the still, it passes into a cylindrical vessel, and from this, through a drum—something like that of an ordinary gas-meter—into the cask which is to contain it. On its way through the apparatus it is measured, gauged and registered. First, its bulk indicated in gallons and decimal parts; secondly, the quantity of either absolute alcohol or of proof spirit which it contains. The measurement and registration of the quantity which passes over ie done directly by the rotation of the drum, each of the three divisions of which holds exactly five gallons. The indication of the strength is done by a swimmer in the cylindrical vessel into which the alcohol first enters. Thie swimmer is attached to a pointer, which, in being elevated and depressed by the lowering or raising of the swimmer, according to the varying specific gravity of the liquid, limits the reciprocating movements of a graduated tongue."

Scientific Progress.

The Earth's Shape and Laplace's Theory.

A writer in the *Scientific Opinion* says that the oblate spheroidal form of the earth, which has been adduced as proof of its original fluidity, is one of the supports of Laplace's nebular hypothesis; but that in fact the supposition of such original fluidity is not necessary in order to account for such form. He says that if, for the purpose of illustration, a spherical form be assumed for the earth,—or indeed any other form capable of rotation about a fixed axis,—it is easily shown that it must always tend to assume and maintain the form of an oblate spheroid, simply from causes at present in action, such as rain, rivers, and glaciers. The material eroded from circumpolar continents must be spread upon the bottom of the equatorial ocean. This form is that of equilibrium between the centripetal and centrifugal forces; and the condition required to bring it about upon a revolving globe, are an aqueous and an atmospheric envelope, time, and an internal source of disturbing power. He concludes that Laplace's hypothesis in no manner derives an argument for its support from the present form of the earth.

ANIMAL LIFE AT GREAT DEPTHS.—R. E. C. Stearns writes the *American Naturalist* that Dr. Carpenter and Wyville Thompson found *Buccinum undatum* at the depth of 1,300 fathoms, in dredging from H. M. ship Porcupine. This fact, and those ascertained by MacAndrew and Prof. Forbes, make it apparent that much is yet to be learned in regard to the "lowest depth at which animal life can exist."

BABINGTONITE.—This rare mineral is described by David Forbes, F. R. S., in the *Philosophical Magazine*. It is essentially a silicate of iron and lime. Its original locality is Arendal, in Norway, and it is rarely met with even there. "It is said to have been found in quartz in the Shetland Islands, and at Massachusetts on epidote; but in the latter case, Dana, in the supplement to the last edition of his *Mineralogy*, states that the angular measurements are not identical." A specimen sent Professor Forbes from Devonshire for assay, contained 20 per cent. metallic iron, and 48 per cent. silica. It occurs as an aggregate of groups of radiating crystalline fibers of blackish green color; fracture hackly; hardness 5.5; spec. gr. 3.436.

CHLORIDE OF NITROGEN.—Mr. Abel has recently discovered that the explosion of perfectly dry chloride of nitrogen in an open vessel produces comparatively slight destructive effects. A drop exploded in a watch-glass, for example, only breaks the glass into two or three fragments, while the same quantity, if wet, shatters the glass to atoms. The thin layer of water acts like the water tamping used with nitro-glycerine in a drill-hole. Chloride of nitrogen has been the subject of some researches by MM. Deville and Hautefeuille. As is well known, it is exploded by friction, by percussion, by contact with grease, and by heat, and, sometimes goes off without any obvious cause at all. Owing to the danger attending experiments with it, the exact degree of heat at which it explodes has never been ascertained, but the chemists named above have determined that it can be made to boil without exploding. As regards the force exerted by the explosion of chloride of nitrogen, the same gentlemen have ascertained that when exploded in confinement, the pressure of the gas liberated cannot be less than 3500 atmospheres.—*Mechanics' Magazine.*

SULPHURIC ACID ACTS ON PLATINUM.—The platinum alembics in which sulphuric acid is manufactured, are found to suffer a serious loss. In an apparatus yielding daily 8,800 pounds of concentrated acid, there was a daily loss of half an ounce of platinum, even when the acid was free from nitrous evaporation. New alembics suffered least on account of the superior compactness of the metal when recently hammered.

American Association for the Advancement of Science.

Prof. Wurtz of the *Gas Light Journal*, says that the Salem meeting was in every sense a success; the attendance highly gratifying, both qualitatively and quantitatively; and the proportion of the papers presented (more than 150 in all) which are of permanent value, unusually large. We find in the *Scientific American* an interesting account of the evening session of the 19th. On that occasion, Dr. J. B. Upham of Boston read a valuable paper upon the heart, and introduced to the audience Dr Groux, a native of Hamburgh, himself an educated physician, and now practicing in Brooklyn, N. Y., who, being congenitally deficient as to the sternum, or breast bone, furnished in his own person an excellent subject for divers ingenious experiments devised by Dr. Upham to illustrate the action of the heart. Dr. G. also described and explained his own case, with great clearness to the audience.

At the conclusion of this reading, Dr. Upham gave some further remarkable experiments. "The beatings of the hearts of several of the physicians and patients of the City Hospital, in Boston, were automatically transmitted by telegraph from the hospital to the hall in Salem. By means of the magnesium light these pulsations were made to manifest themselves to the eight by the vibration of a beam of light on the wall of the darkened room. A regular pulse of 60 per minute was first sent. Then was transmitted the healthy pulse of an excited person, regular, but having a rapidity of 90 per minute. But the most interesting cases were those of a patient suffering from pneumonia, whose pulsations numbered 118 per minute, and that of another afflicted with organic disease of the heart. Prof. Farmer, the well-known electrician, assisted by a skillful operator from Boston, had charge of the electrical arrangements in Salem. The Franklin Telegraph gave the free use of their lines for the experiments. It needs only to be added that these experiments are entirely new, and have their origin in Dr. Upham's studies for making the motions of Dr. Groux's heart perceptible to those in distant parts of a lecture room."

We shall, from time to time, farther notice the various papers read before the Association.

ANCIENT STONE STRUCTURES IN THE ROCKY MOUNTAINS.—The Denver *News* of Sept. 1st announces the recent discovery, by C. A. Deane, of stone structures upon the extreme summit of the snowy range in the Rocky Mountains, 3,000 feet above the timber line. We quote: "Mr. Deane and his party observed large numbers of granite rocks, many of them as large as two men could lift, in a position that could not have been the result of chance. They had evidently been placed upright in a line, conforming to the general contour of the dividing ridge, and frequently extending in an unbroken line for one or two hundred yards. Many of the stones have fallen over or are leaning, while others retain their upright position. In two places connected with this line are mounds of stone, loosely laid up, about two feet in height, and embracing a circular area of about ten feet in diameter. The stones were evidently collected on the spot, as the surface is clearer for a space of several yards around the structures. These lines and mounds of stone bear every mark of extreme antiquity, as the disintegrated granite has accumulated to a considerable depth at their base, and the rocks in the mounds are moss-grown. The feature more particularly identifying these structures with those of mound-builders elsewhere, is, that they present at intervals projections pointing to the westward."

DEATH OF PROFESSOR JUKES.—The London *Times* announces the death of Joseph B. Jukes, M. A., Professor of Geology to the Royal College of Science. He has held various positions under Government, and published several works on geology. He was a Fellow of the Royal Society.

A NEW ANÆSTHETIC.—Dr. Liebseich, of Berlin, has discovered a new anæsthetic agent,—"chloral,"—the aldehyde of trichloreted acetic acid, obtained by the action of chlorine gas upon alcohol. It is thought that it will prove in many cases superior to chloroform or ether.

Novelties on Exhibition at the Mechanics' Fair.

One of the chief features of the Exhibition is the suspension bridge, erected hy Mr. Hallidie, President of the Institute, to show his new principle of huilding such structurcs. Of this we shall speak more at length in a future number. Among the other noteworthy novelties, now for the first time on exhihition in this State, we may mention tbe

Tin and Tin Ware Show

of the San Jacinto Tin Mining Company, as indicative of a new and important branch of husiness, which must inevitably follow the development of the Company's mining property in San Bernardino county. This exhibit consists first of the ore as it comes from the mine, samples of which are shown that weigh a hundred or more pounds eacb, and mucb of which will average from 50 to 70 per cent. of pure tin. Exhihits are also made of tbe ore after it has heen crushed and concentrated, preparatory to heing subjected to tbe smeltiug process which turns out the metallic tin. Several hundred weigbt of tin is exhibited in pigs, of various sizes. Numerous boxes of tin plate are also exhihited, and some tin ware made up from the same. This is tbe first exhibit of this kind ever made in tbe United States. As at pressnt arranged by Mr. E. N. Rohinson, the display is a handsome one.

California Slate.

By the side of the tin exhibit may also be seen another new California production —roofing-slate and flagging-stone from the California Slate Company's works, about four miles this side the town Copperopolis. Tbis slate is equal to the best Eastern product, and is in various sizss, to suit the market. The mine is now ahle to supply any possihle demand which can be made upon the works for many years to come. The Company is shipping to this city some 300 or 400 cases a month. Stones for flagging and hilliard tahles are also among the products of this Company's quarry.

Improved Steam Stamp Mill.

Mr. G. A. Taylor is setting up in the machine department, an improved steam stamp mill, for crushing quartz, in which several new and very important improvements in the method of the direct application of steam to tbe stamps bave heen introduced. This mill will soon he in operation, and will be fonnd well worth the attention of quartz men. The most important improvement introduced consists in placing the cylinders upon slides, so that they may be readily moved downwards as the stamps wear away. This end has been most admirably accomplished, so that the change in position can be effected in a few moments, without any hrake in the steam connection. This last object is gained hy introducing an expansion steam joint, which admits of a change in its length of ahout ten inches.

The valve gear, connected with the same, is also all new and quite different from anything heretofore employed.

An improved stamp guide has also been introduced into this mill, which appears to he just the thing that is needed for such work. This improvement is worthy of most special notice. It can be readily applied to any mill in nse—is extremely simple, easily adjustable and almost indestructihle in its main parts. The iron of the stamp is made to run against hlocks of wood which are adjusted to the wear by set-screws; and which, when worn out, can be replaced almost instantly. We shall give a full and illustrated description of this improved quartz mill in a few days.

There are quite a number of otber important and interesting California inventions and evidences of progress now on exhihition, for the first time, which will be daily noticed in snhsequent issues.

Potter's Breech-Loading Cannon.

This appears to he a really meritorious iuvention, so far as it is possible for any instrument designed for the destruction of human life or art to be. There is in it a combination of excellencies and novelty, which we have heard of in no otber weapou of the kind. Mr. Potter has beeu the first, we believe, to apply tbe principle of the Prussian needle-gun to cannon. It is a breech-loader, and made so by an appliance exceedingly simple and effective. The charge is exploded by a needle wbich passes through tbe breech-pin and into the center of the cartridge—thus securing a perfect comhustion of the powder. The gun is sigbted, hefore the load is placed in it, by looking through the bore itself; thus affording the greatest security to the gunner from the sharpshooters of the enemy. The gun can be loaded and fired with great rapidity. By the application of the needle, which fires the charge from the center, a much smaller amount of powder can he employed to do a given amount of work, aud a proportionate decrease in weight of metal in tbe constrnction of the gun is therefore admissible. The outer portion of the pin is furnished with a packing, which is expanded with the recoil, so that no gas can escape with the discharge of the gun. A patent has heen solicited for this invention.

Potter's Improved Projectiles.

Mr. Potter also exhihits a number of improved projectiles, for which he has obtained letters patsat tbrough the Mining and Scientific Press Pateut Ageucy. These projectiles are quite uovel in their construction, baving three slightly twisted flanges projecting from tbeir rear, which serve to impart to the ball the rotary motion so essential for accuracy, which in other projectiles is accomplisbed by rifling the gun barrel. By the use of these projectiles a smooth-bore gun is made equally as effective and accurate as one that is rifled. Moreover, contrary to what one would suppose, these projectiles meet with much less resistance from the air than those ordinarily fired from rifled barrels. This is known from the fact that while the latter move in their flight with a loud hissing noise, the result of atmospberic friction, Mr. Potter's improved projectile moves with equal celerity, precision aud force, but absolutely without any noise whatever. One of the projectiles exbibited is constructed in two sections, with a chamber hetween tbe two, in which may be placed a powerful detonating powder, which will be exploded at the iustant of contact, imparting a renewed impulse, almost or quite eqnal to that originally given in the harrel of the gun itself. This projectile is intended for or agaiast forts, iron-clads, etc.

Kennedy's Improved Propeller.

Mr. John E. Kennedy exhibits, at the eastern end of the machiaery department, an improved propeller, the construction of which is designed to secure the pressure of the hlades upon the water as to prevent, to a great extent, the usual loss from slip and splashing. It is claimed that by the action of this propeller the water is so concentrated or packed hehind each hlade, as to be driven directly back in a comparatively nnhroken column. This is accomplished hy a novel formation of the blades, which have a reverse turn upon their extreme front or outer extremity. This model presents quite an innovation upon the ordinary form of propellers, and is now exhibited to the puhlic for tbe first time.

California Flax.

Ahout midway of the southern portion of the Pavilion, Mr. W. D. Perriae, exhibits some very superior samples of flax, growu upon his ranch at Half Moon Bay. A quantity of the new fiber is also shown. This is pronounced a fair sample of a field of 180 acres. No portion of the world can show a better growth. Mr. Perrine has had much experience in this hranch of culture, aad bas entered upon it with the view of utilizing hotb the seed and fiber. His first attempt to grow flax in this State was made in San Diego County, where he found the climate too dry and hot. He is decidedly pleased with the climate and soil of bis present locality. Flax needs for a vigorous growtb a cool aad moist climate.

The scarcity of cotton is turniag the attention of people in the Atlantic States more than heretofore to the culture of flax. In many places whore they bave heen raising it solely for the seed, they are now turning the fibre to good account. Immense quantities of bagging for cotton hales are now made from flax, instead of as formerly from cotton. It is estimated that not less than twenty million yards of such cloth will be made the present season in the Atlantic States, the value of which will not fall much if any short of $5,000,000.

The present is a propitious time for the introduction of flax culture, for its fiber, into California. The demand for flour and other sacks, already reachiag something like a million, annually, is rapidly increasiag. Most of tbe raw material for these sacks is now imported; we can and sbould raise every pound of this material at home. The success of Mr. Perrine, and growers in otber parts of this State and Oregon, some of whom, hy the way, sbould have heen repsented at this exhibition, has fully demonstrated the practicability of this culture. We have already a good market for the seed at tbe oil mills, now let some of our enterprising capitalists furnish the macbinery and capital necessary for working up the fiber, and we sball witness the opening up of a new business on this coast which will tell wonderfully upon our progress and prosperity.

Opening Ceremonies at the Pavilion.

[From the Mechanics' Fair Daily Press, Sept. 15.

Promptly at the hour appointed, the sound of the big holl and screech of tbe steam whistle gave signal that the work and noise of preparation must cease wbile the opening ceremonies were in progress. The same signal announced the appearance in the hall of the officers of tho Institute and Committee of Management, accompanied hy the Orator, Chaplain and invited guests, among whom were Mr. Seward and Gen. Ord. The party marched in procession, witb martial music, up the central aisle of the nave to tbe fountain, where they filed off to the right and passed around to tbe rear of tbe speaker's platform, which they ascended and occupied. The appearauce of Mr. Seward in the group was the signal for hearty applanse. After order had been restored, President Hallidio steppod forward and made a sbort speech, apologetic of the incompleteness of the work of the exhihitors, and alluded to the general and superior character which the Exhibition would assume when everything was in place. Exhihitions were made from all parts of the United States, from China, Japan, the Islands of tbe Pacific, etc. Ho alluded, in brief, to the financial condition of the Association, which was quite satisfactory. It was hoped and confidently believed that the proceeds of the present Exhihition would place the Institute well nigh out of debt. It alroady numhered 1,300 members, and was constantly increasing in numbers, strength, usefulness and in the confideuce and respect of the public. He hoped that through its influence the mechanics of San Francisco and of the Pacific Coast, would soon reach tbat poiat of social and intellectual influence, which their importance in the world's economy entitled them to. He alluded to his own position as a mecbauic, called attention to his labor-worn palms, and was proud that he was a mechauic. He desired to see more sympathy exhibited for mechanics among the young ladies of the city; appealed to the memhers of the Normal and Denman young ladiss' schools, to exercise their iuflucace in tbis direction, among their friends and brotbers. Mr. Hallidie's remarks were warmly applauded.

The pupils of the Denman School then united in a beautiful cbant, accompanied by music from the haad; after which the Rev. M. C. Briggs offered a fervent prayer appropriate to the occasion. The school cbildren then sang, with beautiful effect, the charming soag, "Away to the Woods," after which the Presidsnt introduced the orator of the occasion, Mr. Irving M. Scott, a young man who has grown up with our city—a tborough mechanic, who has worked his way up from the hench to a partnership in one of the most extensive foundries and machine shop establisbments on the Pacific Coast—the Union Foundry and Iron Works.

The address was listened to with the most marked attention by the vast concourse of ladies and gentlemen present. The earnestness and interest which was manifested dnring its delivery by so large aad intellectual an audience, furaisbes the happiest and most emphatic testimony which can he given of its merit. Mr. Scott's manner of enunciation, always good, was especially so on this occasion. He spoke with a distinctness and volume of voice wbich greatly added to the literary effect and pecnliar appropriateness of what was said. He was frequently applauded during its delivery.

A beautiful hust of the eminent scientist, Alexander von Humholdt, the work of P. Mezzara, an artist of this city, bad heen placed in the center of the speaker's platform, veiled with the national flag. When the orator reached that part of his address where allusion was made to that distinguishsd man, and to the happy circumstance that they were then assemhled on the one bundredth anniversary of bis birthday, this bust was unveiled amid great applause and sensation.

At the conclusion of the address, lond calls were made for Mr. Seward, wbo came forward to the front of the stand, but merely bowed his acknowlegments, and retired again to bis seat. The Denman School girls, accompanied hy the band, then struck up the national hymn "America," in wbich the entire audienco, rising to their feet, joined most heartily.

The ceremonies heing coneluded, the school children, who were mostly in the rear of the venerahle and distinguished ex-Secretary of State, expressed a desire to see him. Mr. Seward immediately changed his position, smiled, and shook hands with quite a number, who eagerly pressed forward to crave that privilege.

The exercises heing thus concluded, tbe crowd dispersed—some to retire to their homes, others to wander through the mazes of the Pavilion, and examine the articles on exhihition, and witness the further preparation of the same, which was resumed immediately after the conclusion of the opening ceremonies.

New Incorporations.

South Fork Canal Company.—For the purpose of running and constructing canals and ditches to convey water from the South Fork of the American river and otber sources to the vicinity of the city of Placerville and other points for irrigation, water power, mining, manufacturing and other purposes. Capital $100,000, in sbares of $100 each. Trustees—Charles Hosmer, Solomon A. Sharp, B. S. Hunt, Joseph Taylor and E. H. Evans. The principal place of business will be in Placerville.

Peoples' Gas Company.—Sept. 15th.—The object to manufacture gas and supply the residents of the State of Californaia with the same. Capital stock, $2,000,000, divided into twenty thousaud shares of $100 each. Trustees—Isaac Rowell, Alexander Gnoiu, D. O. McCarthy, Robert Kirk, and Nathaniel Page.

Continental Life Insurance Co., 302 Montgomery street, corner of Pine.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, September 18, 1869.

Financial.

Our local money market sympathizes strongly with that of New York, but is never subject to those violent and extreme spasms with which New York is so frequently afflicted by reason of its cormorant Wall Street speculators, who are just now engaged in the worthy occupation of waging financial war against the importing merchants. This class have to use large amounts of gold for customs duties, and it seems that prominent Wall Street operators have combined with a number of foreign capitalists to purchase and lock up $30,000,000 in gold, so as to compel importers to purchase from them at exorbitant rates. To procure the necessary gold, the importers have been compelled in several instances to purchase United States bonds and sell them in Europe, ordering the proceeds to New York. Remittances from this city to the extent of $1,000,000 have been forwarded to New York between the 1st and 16th of September, and will probably continue to be unusually large for some time to come. Nevertheless we note a growing ease in our market, and shall soon receive back the money paid for domestic produce to our farmers, who must now commence to lay in their fall and winter supplies.

The funds in our savings banks continue to augment, and are actively sought on real estate securities at 1@1¼ per cent. per month. Bank rates of discount for first class paper rule at 1¼@1½, according to circumstances; outside rates are from 1¾@2 per cent. per month.

Bullion is scarce, owing to the large quantities forwarded to other places and limited supplies from the mines. We quote bars at 860@870; silver bars from par to ⅜ percent. discount; currency bills on Atlantic cities, 34 per cent. premium on gold; coin sight drafts, 1¼@1¾ per cent. premium; telegraphic transfer are nominal at 2¼@2¾ per cent. premium; sterling exchange, 48¾d; commercial exchange, 49⅛d; Mexican dollars nominal at 6@7 per cent. premium; gold in New York, Sept. 16th, 136¾; legal tenders in this city, 73¼@74c.

The exports of Treasure from Sept. 1st to date bavs been as follows:

Sept. 4—Per Japan—		
To China	$516,218 04	
To Japan	24,878 00	
		$541,096 04
Sept. 1 to 9—Overland to New York		539,511 34
Sept. 14—Per Colorado—		
To England	$649,670 02	
To France	177,304 18	
To Central America	11,940 00	
To Panama	20,000 00	
		858,914 20
Sept. 10 to 17—Overland to New York		477,500 00
Total since September 1st, 1869		$2,417,021 58
Previously this year		25,999,830 42
Total since January 1st, 1869		$28,416,852 00
Corresponding period, 1868		27,613,094 36
Increase this year		$ 803,847 64

The duties paid at the Custom House in this city from September 10th to date have been as follows:

September 10	$16,837 84
September 11	30,716 08
September 13	24,409 86
September 14	41,445 41
September 15	17,748 19
September 16	26,914 58
Previously in September	304,377 65
In September to date	$462,449 59
In August	769,589 56
In July	942,814 71
In June	675,051 81
In May	595,020 24
In April	554,882 05
In March	780,447 40
In February	602,340 00
In January	532,997 97
Total since January 1st, 1869	$5,915,603 33
Corresponding period, 1868	6,186,290 50
Decrease this year	$270,687 17

F W. J. Gatewood, President of the San Diego Railroad, accompanied by his staff, and Generals W. L. Rosecrans, N. S. Hunter, T. S. Sedgwick, the Hon. S. B. Axtell, and others interested, left the city for San Diego last Wednesday, and the work will be prosecuted with vigor forthwith. Contracts have been made with Risdon & Co. for iron work of all kinds, and full supplies of stores have been purchased. The greatest difficulty anticipated on this end of the route is in the deficiency of water supplies while working on the Colorado desert; but we apprehend that obstacle is exaggerated, as water can be obtained anywhere on the desert by digging from fifteen to thirty feet, according to locality. By running the line direct from Antelope Peak to Tucsou a distance of ninety miles can be saved, and much money economized. It would also tap the richest copper mines in this section of the Union, and avoid all chances of damage from the annual overflow of the Gila, which changes its bed nearly every year, and in some places to the extent of several miles. Such great and repeated changes would expose the road to the chances of much damage. The direct route leads over a succession of high, level *mesas* of volcanic appearance, separated by inconsiderable gullies or intervals, which could be bridged at comparatively small expense. We learn that the road will be laid out on as straight a line as possible, and we know of no serious obstacle in the way. It is positively certain that one Pacific Railroad can never do the business between this coast and the Atlantic. By the time the southern road is constructed there will be more than enough to employ three such lines, and a healthy competition between them cannot but be advantageous to every interest. In winter, particularly, the southern route will be selected, as it will not be blocked or cumbered with snow; while the climate is in every respect superior, and the country through which it must pass possesses every attribute for farming, mining, and manufacturing enterprises. There are no such heights to climb, no such obstacles to surmount, as were met and overcome on the existing railroad. For hundreds of miles very little grading will be required; and along much of the route the very best of mesquite wood can be had in great abundance for ties and other timber work. One of the greatest commercial benefits which San Francisco could experience would be the building up of San Diego into a large and populous city. If there were no Philadelphia, no Boston, and no Baltimore, the city of New York would not be to-day the great place it is. It is with no ordinary gratification that we note the vigorous manner in which the San Diego and Gila River Railroad has been taken in hand, and the energy which marks the movements of those having charge of the work. In less than five years we may be rejoicing in the possession of another great trans-continental artery of trade and travel.

Shipments of Fruit from this city, overland, have been rudely checked by the Chicago Board of Health. A. Giorgiani, an extensive dealer, sent forward about $2,000 worth of grapes and pears, which arrived at Chicago in a damaged condition. Instead of permitting the consignees to separate the good from the bad, the Board of Health ordered the whole invoice to be carted seven miles outside the city limits, and destroyed. Sig. Giorgiani netted a dead loss of $3,000, including the freight, which was $1,000. The intelligence of this transaction has thrown cold water over our Fruit exports, as no one feels inclined to place himself at the mercy of the Chicago Board of Health.

City Stocks.

No large transactions of miscellaneous securities were made during the week under review. We note the sale of a few shares of California Steam Navigation Company at 63 per cent. The usual dividend of 1 per cent. was paid on the 15th inst.——The Omnibus Railroad Company disbursed its usual monthly ½ per cent. dividend on the 16th inst.——The Bank of California disbursed its customary dividend of 1 per cent. per month on the 15th. ——At the close, sales of San Francisco Gas Company were made at $85 per share.

Mining Share Market.

The mining share market has been rather apathetic since our last similar reference, the aggregate sales showing no increase over the previous week. Prices exhibit considerable fluctuation, and for the most part show a decline. Many dealers look for an improvement over present rates later this fall—at any rate, before next spring.

HALE & NORCROSS—has declined from prices ruling early in the week. For the week ending Sept. 11th, 991¾ tons of ore were mined; 319 coming from the upper mine, and 672¾ from the lower. During the same time 777¾ tons were delivered to custom mills, leaving on hand 1,898¾ tons. On the 12th inst. the northern stopes of the fifth level exhibited little or no change since the previous report, the various floors showing the same uniformity of width of vein and quality of ore. The breasts in the south raise on this level are reported to show considerable improvement in the quality of the ore, particularly to the south of the south winze. The west drift cut the vein, but the flow of water prevents exploration at present. The south body of ore on the fourth level is said to be opening very favorably, but great difficulty is experienced in extracting ore on account of the presence of water. The south drift has not yet reached the boundary of the ore.

CHOLLAR-POTOSI—sold at very uniform rates to a less extent than the previous week. During the week ending Sept. 10th 1,118¾ tons of ore were extracted, and 1,085¼ sent to reduction mills. Of the shove-named, the Blue Wing locality produced 809¾, New Tunnel, 144, and Grass Valley, 155 tons. This mine continues to look as well as heretofore reported. On Sept. 14th $27,575 in bullion was sent to the office in this city.

GOULD & CURRY—maintained rates of previous week, under small sales. For the week ending the 13th, 213 tons of ore were extracted, and 348 sent to mills. The south drift at the seventh station has been carried in 56 feet, and north drift 25 feet.

IMPERIAL—shows a smart decline. The lowest station has been opened 18 feet, and the east drift carried forward 22 feet. An assessment of $10 per share was levied on the 15th inst.——On the 14th, the OPHIR drift was 591 feet in length.——OVERMAN shows a bullion yield of $17,000 for the month of August.

AMERICAN levied an assessment of $1 50 per share on the 15th inst.——CHLORIDE CONSOLIDATED (W. P.) levied an assessment of $1 per share on the 16th inst.

A correspondent has the following:

The Yellow Jacket yields some 200 tons daily from the south mine, and 40 tons from the Yolo tunnel. They soon the mud and water will be reduced in the old north shaft to the track-floor of the 700-foot section.——There is nothing new or important to report in the condition of either the Kentuck or the Crown Point mines.——The lower tunnel of the Occidental mine cut the ledge, but has only penetrated it five or six feet, owing to the angle at which it is struck. The ore looks well and assays well, considering that it is merely the outskirts of the ledge, and not in the regular pay ore struck at all.

The White Pine *News* of the 11th says:

All our mills are running to their full capacity, and some of them have engagements that will keep them busy for several weeks. The weather is favorable, and our teamsters are making the best use of it by keeping their teams on the road from morning till night, hauling ore to the mills. Not only are there no signs of our mines giving out as the work of development progresses, but new bodies of ore are being constantly discovered, and those already opened are proved to be more extensive than at first supposed. Neither does the quality of the ore deteriorate as depth is attained, as many believed would be the case. On the contrary, the average quality of the ore now being reduced at our mills is higher than formerly, though the ore is not selected so closely as when the mills charged $50 and upward for crushing.

MECHANICS' FAIR "DAILY PRESS."—Dewey & Co., of the *Mining and Scientific Press*, have commenced the publication of a little paper called the DAILY PRESS. It will contain all items of interest and occurrences of note in connection with the Exhibition. The printing press is propelled by steam from the boilers outside the Pavilion. During the day and evening it will be kept in operation, that all may witness its working and have a copy of the PRESS fresh from the forms.—*San Francisco Daily Times.*

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Cons., Sierra co., Aug. 6, 50c.	Sept. 7	Sept. 23*
American, Storey co., Sept. 15, $1 50	Oct. 19	Nov 4
Black Jacket, White Pine, Aug. 18, 10c.	Sept. 17	Oct. 21
Bucklin, White Pine, July 14, 5c.	Aug. 20	Sept. 30
Bullion, Storey co., Nev., Aug. 21, $10	Pay. immediately.	
Chiplonena, Sonora, July 26, $2 50	Aug. 26	Sept. 11
Cordillera, Mexico, July 23, $1	Aug. 24	Sept. 8*
Crown Point, Storey co., Nev., Aug. 6, $5	Sept. 9	Sept. 28
Cala. Slate, Calaveras co., Sept 7, $1	Oct 7	Oct. 20
Cherokee Flat, Butte co., Sept. 3 $5	Oct 6	Oct. 21
Daney, Lyon co., Nev., Aug. 5, $1	Sept. 6	Sept. 26
Eclipse Cons., White Pine, Aug. 11, 50c.	Sept 16	Oct. 8
Emma, White Pine, Aug. 27, 15c.	Sept. 30	Oct 20
Evening Star No., 1 White Pine, Aug. 25, 10c	Sept 23	Oct 15*
French, White Pine, July 19, 5c.	Aug. 24	Sept. 13*
Featherstone, White Pine, Aug. 31, 50c.	Oct 7	Oct. 26
Chloride Flat Cons., W. W., Sept. 15, $1	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c.	Oct. 18	Nov. 6
Glenwood, El Dorado co., Aug. 2, 30c.	Sept. 8	Sept. 28*
Hope Gravel, Nevada co., Aug. 6, $1	Sept. 13	Oct. 4
Hornet, White Pine, June 24, 10c	Sept. 8	Sept 30*
Hearst, White Pine, Sept. 15, 50c	Nov. 1	Nov. 22
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
Ion, White Pine, July 14, 10c.	Aug. 19	Sept. 24
Julia, Storey co., Nev., Aug. 4, 25c.	Sept. 7	Sept. 25
Kincaid, Tuolumne co., Aug. 3, $2 50	Sept. 8	Sept. 27*
Kentuck, Storey co., Nev., Aug. 5, $10	Sept. 6	Sept. 25
La Plata, Sonora, Mex., July 8, 2½c.	Sept 13	Oct. 1
Lyon M. & M., El Dorado co., July 21, $2.	Aug. 30	Sept. 20*
Monmouth, White Pine, July 16, 50c.	Aug. 23	Sept. 13
Maxwell, Amador co., Aug. 14, $1	Sept. 16	Oct. 21
Mazeppa, White Pine, June 30, 10c.	Aug. 5	Sept. 11
Mammoth Cave, White Pine, July 12, 10c.	Aug. 19	Sept. 23
Morning Star, Alpine co., July 21, $1 50.	Aug. 31	Sept. 16*
Marlborough, White Pine, July 19, 5c.	Aug. 24	Sept. 13*
North Bloomfield, Nevada co., Aug. 6, $3	Sept. 9	Sept. 25
New Era, Amador co., July 13, 40c.	Sale Sept. 20	
Ophir, Storey co. Nev., July 23, $3	Aug. 25	Sept. 16
Pine Hill Treasure, Nev., Aug. 8, $2	Oct. 4	Oct. 23
Pacific Cons., White Pine, July 30, 10c.	Sept. 8	Sept. 28
Pocotillo, White Pine, Aug. 2, $2	Sept. 6	Sept 27
Phœnix, White Pine, July 12, 15c.	Aug. 12	Sept 30
Rathburn, White Pine, Aug. 27, 50c.	Oct. 1	Oct. 21
R. K. M. Co., Humboldt, Nev., July 27, 20c.	Sept. 13	Oct. 2
Siempre Viva, Mexico, Sept. 17, $1 50	Oct. 21	Nov. 8*
Silver Wave, White Pine, Aug. 28, 20c.	Sept. 28	Oct. 20*
San Jacinto, Tin, San Bernardino co., Aug 20, 5c.	Oct 4	Oct 18
Segregated Belcher, Storey co., Aug. 5, $1.	Sept. 9	Sept. 29
Sensior, Storey co., Nev., Sept. 5, 50c.	Oct. 18	Nov. 8
Sierra, Douglass co., Nev., Aug. 20, $2.	Sept. 23	Oct. 14
Silver Sprout, Inyo co., July 27, 50c.	Aug. 31	Sept 20*
Taylor, El Dorado co., Aug. 25, 20c.	Oct.	Oct. 20*
Tecumseh, Calaveras co., July 22, $7 50.	Aug. 24	Sept. 15
Thunderbolt, White Pine, Sept. 14, 5c.	Oct. 18	Nov. 6
Treasure Trove, White Pine, July 27, 20c.	Aug. 30	Sept. 18
Virginia, No. 2 White Pine, July 21, 25c.	Aug. 26	Sept. 11
White Pine Mineral, White Pine, July 15, $1	Aug. 20	Nov. 8
Wells, White Pine, Aug. 10, 30c.	Sept. 17	Oct. 7*
West Californis, White Pine, July 10, 10c.	Aug. 17	Sept. 25
Yellow Jacket, Storey co.	July 19, $10.	Aug. 18	Sept. 17

MEETINGS TO BE HELD.

Blue Gravel Cons., Nevada co.....Annual Meeting, Sept. 20
Cosala, Mexico.....Annual Meeting, Sept. 20
Fresno, Quicksilver.....Annual Meeting, Sept. 15
Mineral City, White Pine, Aug. 24, 50c.....Oct. 7—Oct. 22
New Era, Amador co.....Annual Meeting, Sept. 13
Nevada, Nevada co.....Annual Meeting, Sept. 20
Oriental.....Annual Meeting, Sept. 20
Segregated Belcher, Storey co.....Annual Meeting Oct. 5
Wastelle, White Pine.....Annual Meeting, Sept. 17
White Pine Smelting.....Meeting, Sept. 20

LATEST DIVIDEND.

Amador Co., div. $3 per share.....Payable August 7, 1869
Alpha Cons., Storey co., Nev., div. $2....Pay. June 19, 1868
Bacou, Storey co., Nev., div.....Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.....May 10, 1869
Crown Point, div. $7 50.....Payable Sept. 12, 1868
Chellar-Potosi, div., $2.....Payable August 6, 1869
Eureka, div. $5.....Payable August 10, 1869
Empire M. & M., Nev., dividend $6. ..Payable May 15, 1867
Gould & Curry, div. $2.....Payable July 15, 1867
Gold Hill Q M & M. dividend. $7 50....Payable July 13, 1868
Golden Chariot, Idaho, div. $3.....Payable June 15, 1869
Golden Rule, Tuolumne co, div. 50c. & sh.. Pay. Aug. 26, 1869
Hale & Norcross, div. $6.....Payable July 10, 1869
Imperial, Storey co., Nev., div.....Payable June 20, 1868
Industry, White Pine, div., $1.....Payable July 1, 1869
Keystone, Sierra co., div., $32.....Payable May 6, 1869
Kentuck, div. $20 per share.....Payable Jan. 10, 1869
Merit Star, dividend, $7.50.....Payable Sept. 12, 1868
Occidental, div. $2.....Payable March 2, 1869
Pacific Unassessable, div.....Payable June 18, 1868
Sand Spring Salt, dividend $1.....Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50....Payable Dec. 19, 1868
Savage, Virginia, Nev., dividend, $4...Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1....Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c....Pay. August 10, 1869
Virginia & G. H Water Co., Dividend, payable April 16, 1869
Yellow Jacket, div., $5.....Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, September 17, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5 20s, 1862	87	89
Legal Tender Notes	73¾	74
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & int.	
San Francisco City Bonds, 6s, 1855	85	87½
San Francisco City and County Bonds, 6s, 1858	85	—
San Francisco School Bonds, 10s, 1861	100	—
San Francisco School Bonds, 10s, 1861	par & int.	
San Francisco City and Co. Sch'l B'ds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Saersmento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	75	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	48	53
State Telegraph Co	—	—
Spring Valley Water Co	63	63¼
GAS COMPANIES.		
San Francisco Gas Co	82	84
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	69
Central Railroad	56	—
North Beach and Mission Railroad	—	68½
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	193½	20
Occidental Insurance Co	85	91
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97¾	100
The Bank of California	150	160
MINING STOCKS—WASHOE DISTRICT.		
Alpha	11	13
Baltimore American	—	—
Belcher	14¾	15
Bullion, G. H	11	14½
Crown Point	22	22¾
Cole (Va.)	—	—
Confidence	30	—
Consolidated Virginia	—	3
Chollar-Potosi	14½	15
Daney	2	2¾
Exchequer	5	8
Empire Mill and Mining Co	—	35
Gould & Curry	15	16
Gold Hill Quartz	—	—
Hale & Norcross	115	116
Imperial	36	47
Julia	1	1¾
Justice and Independent	4	5
Kentuck	165	169
Lady Bryan	20	—
Mexican	11¾	13¾
Occidental	12½	14
Ophir	14	14¾
Overman	72	76
Segregated Belcher	9	10¾
Savage	41¾	42
Sierra Nevada	7	7¾
Union	—	—
United States	—	—
Yellow Jacket	40	40¾
MISCELLANEOUS MINING STOCKS.		
Amador (California)	290	300
Belcher, White Pine	6	8
Eureka, (California)	210	—
Golden Chariot (Idaho)	25	30
Silver Cord (Idaho)	½	—
Golden Rocket, California	—	—
Pocotillo, White Pine	2¾	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, September 17, 1869.

Flour, Extra, ₱ bbl	$5 25	@	$5 75
Do. Superfine	4 00	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 65	@	1 65
Oats, ₱ 100 lbs	1 05	@	1 35
Barley, ₱ 100 lbs	90	@	1 35
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	1 00
Hay, ₱ ton	8 10	@	13 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	6	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14¾	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	—	@	20
Do. Rio	—	@	18
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	45	@	45
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	40	@	55
Isthmus Butter, ₱ lb	30	@	35
Cheese, California, ₱ lb	15	@	17
Cheese, Eastern, ₱ lb	15	@	15
Lard, ₱ lb	16	@	17
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	—	@	10

Retail Prices.

Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	35	@	40
do. Oregon, ₱ lb	50	@	60
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	50	@	60
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	—	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	1½	@	2
Potatoes, Sweet, ₱ lb	1	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	12
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O	10	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, September 17, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1½c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2½c ₱ lb.

Scotch and English Pig Iron ₱ ton	$35 00	@	$36 00
White Pig ₱ ton	34 00	@	35 00
Refined Bar, bad assortment ₱ lb	— 03	@	— —
Refined Bar, good assortment, ₱ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04¾	@	— —
Plate, No. 5 to 9	— 04	@	— 04¾
Sheet, No. 10 to 13	— 04¾	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5¾
Sheet, No. 24 to 27	— 05	@	— 6¼

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb

Sheathing, ₱ lb	— 26	@	— —
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	—	@	35
STEEL.—English Cast Steel, ₱ lb	—	@	15
QUICKSILVER, ₱ lb	— 55	@	— 60
LEAD.—Pig, ₱ lb	— 7½	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
ZINC.—Sheets, ₱ lb	— 10¾	@	— 11
BORAX.—California, ₱ lb	— 38	@	— 40

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Sept. 17, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.			Per ton.
12 per cent. ore	$24 00	18 per cent. ore		$41 40
13 " "	26 65	19 " "		44 65
14 " "	29 40	20 " "		48 00
15 " "	32 25	25 " "		62 50
16 " "	35 20	30 " "		75 00
17 " "	38 25			

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

These prices, corrected by W. T. Atwood, we believe will be found substantially correct, and can be realized at this date.

PLUCK VS. LUCK.—While ten men watch for chances, one man makes chances; while ten men wait for something to turn up, one turns up something; so while ten fail, one succeeds, and is called a man of luck, the favorite of fortune.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Items.—*Miner*, Sept. 4th: Gray oxide of copper of high grade is now found in the Leviathan tunnel.....We notice posters up for bids to run the tunnel of the Monitor C. M. Co. one hundred feet. It is expected in this distance the increase of ore will be sufficient for the mill....Ray is getting good looking quartz, cutting across the Mountain lode in his claim. The M. C. M. and James Barrett Cos., adjoining claims on the same lode, are well pleased with the exhibit made....Assessment rock is said to be the kind now found in the face of the Mountain No. 1 tunnel. ....The new shop and new front to the Globe tunnel are about completed. Indications in the face of the tunnel are every day more flattering.

AMADOR COUNTY.

Moore.—*Ledger*, Sept. 11th: We learn that parties from San Francisco will at once commence work on the old Moore mine, located one mile south of this place.

Lincoln.—New and complete steam hoisting works have just been put in operation at the Lincoln mine, near Sutter Creek, and are working to the entire satisfaction of the proprietors. The mine is owned by Gov. Stanford, R. C. Downs and others, is on the great mother lode, and is about one-half mile north of the Hayward mine, now owned by the Amador Co.

CALAVERAS COUNTY.

Union Shaft.—*Chronicle*, Sept. 11th: We learn that Messrs. Peters, Champion & Arnot, who have been engaged in freeing the old Union shaft of water, have at last got the upper hands, and are taking out gravel that prospects largely. In addition to the discovery of an extensive pillar of new ground, they have ascertained that a great portion of the old diggings will pay well for re-working.

Quartz.—Forty tons of fine looking rock from the claim of Hadlock & Co., has been hauled to Smith's mill, and is now being crushed. Judging from the large amount of gold visible on the plates in the battery, the yield will be good. The lead is near town, and considerable excitement is being manifested in regard to it.

MARIPOSA COUNTY.

Mariposa Quartz Mill.—*Gazette*, Sept. 15th: Steam was turned on yesterday. Extensive alterations have been made in the mill. The batteries have been fitted up for dry crushing and appliances for amalgamating as in the Ryerson process introduced. Revolving drums for further pulverizing the sand are not at present set up.

Benton Mills.—We learn that the Mariposa Co. are going to erect a 60-stamp quartz mill at Benton Mills, on the Merced. The carpenters who have been repairing the mill below town are soon to be transferred to the river.

NEVADA COUNTY.

The State of Things.—Grass Valley *Union*, Sept. 8th: Our citizens remark upon the quietness of the town, but business prospects have not been so good in three years. No idle miners are upon the streets as during the strike, but all are busy and more mines are at work than at any time since 1866. Besides the old mines, there are a number of prospecting operations going on which cause the stamps of the custom mills to be kept busy.

A Good Prospect.—Same of 10th: A. J. Cook & Co., on Greenhorn Creek, six miles from Grass Valley, have been prospecting on the claim during the summer. Two shifts have been working, and the men on one shift, during 19 days, were in the habit of picking out pieces of rock that showed free gold. The other shift paid no attention to selections, but put all the rock in the dump pile. The rock selected was pounded by hand and yielded $1,000.

A Good Clean Up.—Same of 14th: Jos. Perrin's mill was cleaned up last Saturday after a four weeks' run. The mill is run by water power and has eight stamps. The rock crushed in the four weeks made 130 loads.

Allison Ranch.—*Gazette*, 14th: The times at Allison Ranch are beginning to assume their old time briskness. The new 16-inch pump is in place and will be in operation in a day or two. The company are working one or two other ledges in the vicinity with favorable results.

Remedy for Dull Times.—*Transcript*, 8th: Coöperative enterprise. There are yet unlimited opportunities in the mines of this county. Let our people cease croaking and take advantage of the opportunities around them, and we are confident times will improve. It is idle to fold our arms and expect capitalists to come and help us. We must first demonstrate the wealth of our mines and capital will soon come, begging for a chance.

Meadow Lake.—Same of 9th: The little furnace for roasting ore, erected by Burns & Blood, to test the Burns' process, is kept at work, and the experiments are satisfactory. The proprietors charge $40 per ton for working ore, and will not take over five tons. They also work for the full proceeds, the owner of the process paying all expenses from the mine. The new roasting was started up on Monday. The rock roasted in this furnace will also be treated by the Burns' process. The miners in the vicinity are highly encouraged.

A Big Lump.—Same of 10th: About 10 days ago a nugget, weighing 10 ozs., and worth $180, was found in the claims owned by Wells & Co., at Steep Hollow, a short distance from Remington Hill in Little York township. A large number of specimens, weighing from an ounce to an ounce and a half, have recently been found.

The Little York Water Mining Co.—At the time our last was written the company was running 600 inches of water 24 hours per day, and working 21 men. They are now manufacturing 2,000 ft. of pipe, through which water will be conducted to two additional sets of claims as soon as the water season commences.

YUBA COUNTY.

Oregon Hill.—Correspondent *Appeal*, Sept. 14th: A company of Chinamen have bought Pepper's ranch and orchard for $3,000, and propose buying 3 more abandoned placer claims. There are 7 companies at work in the Yuba; one at Long Bar employs a dozen hands, all old French miners. These claims are worked by a hoisting apparatus called a mast, and the machinery is run by the water in the river. Roberts and Alberts are having iron pipe made, on the ground near their hydraulic claim. The pipe is 14 inches in diameter. Their claim has a front of 2,000 ft., and a hight in some places of 75 ft.

SISKIYOU COUNTY.

Big Ditch.—Yreka *Union*, Sept. 11th: James Quinn has 100 Chinamen engaged in cleaning out the ditch. It will conduct water to Yreka and Hawkinsville in about three weeks. The citizens of those places have contributed $800 to aid in repairing the ditch.

TRINITY COUNTY.

Douglas City Items.—*Journal*, Sept. 11th: The wing-dams along Trinity River were generally washed away by the recent rise, but nearly all will be rebuilt this season....A company of Chinese have a claim on Point Bar, above Steve Lane's, which has been paying them well this summer.

Northfork Items.—R. Currie has struck a good claim at the mouth of Eastfork, about one mile above the town of Northfork....Yohe & Leary are washing up in their claim on the bar opposite the town. Some very rich spots have been found in the same bar....Henry Fauhel, on Trinity River, between Northfork and McGillivray's, is doing extremely well.

TUOLUMNE COUNTY.

A Rich Mine.—Sonora *Democrat*, Sept. 11th: The owners of the Confidence mine cleaned up their mill this week, after a run of seven days, crushing 170 tons, which yielded 237 ounces retorted gold, worth $4,000. This being the first run made in the new mill, amalgam to the value of several hundred dollars remains in the batteries which cannot be got at in an ordinary cleaning. The Confidence have out already a large amount of ore.

The Rough Mine.—Three-fourth of this mine has been sold by Mr. Richards to practical miners. Mr. Richards retains the other fourth, and pays his share of the labor. The mill runs five stamps and is in good working order.

Arizona.

Walker's District.—Prescott *Miner*, Aug. 28th: The Box Elder ledge, Jackson & Co., is a rich thing. The ore is extremely like that from the famous Colorado "Bob-tail." The shaft is to be sunk 100 feet before testing the rock. It is now 60 feet, and the vein six feet wide. Uncle Billy Pointer is still at work upon his lode. We learn that the shaft is down 20 feet, at which depth he has a good ledge of four feet. As yet, but few sulphurets have shown themselves, and the rock is very rich in free gold.

Hassayampa District.—A. O. Noyes has been experimenting with the Paul & Wood process, and has succeeded in working Chase ore by it, to his satisfaction.

Charley Taylor, of Upper Hassayampa, has at last secured competent men to finish his water wheel. He has sunk a shaft of 20 feet on the Astor lode; at that depth the vein is three feet thick, and the rock just as rich as he cares to have it.

The placer miners of the district are working away with rockers, making small wages.

The Sterling.—A note from A. Widman, Supt., Aug. 24th, informs us that the company's mill was started on the 23d inst., and that everything worked to the satisfaction of all; also that the mine was yielding plenty of ore. The only drawback is the scarcity of water. The mill can only be run at intervals. It is thought that it will crush 13 tons every 24 hours.

Walnut Grove District.—At latest dates Mr. Lambert was arastraing ore from the Big Rebel. Several parties had commenced work in the creek.

Weaver District.—The Mexicans in the placers are said to be taking out considerable gold.

The party that purposes prospecting the country near the mouth of the Little Colorado, is ready to start as soon as the man who is to guide them to the diggings gets here from La Paz.

The Richest Yet.—Arizona, Aug. 21st: Some time since, a man named McPherson made a discovery of what bids fair to be one of the richest silver mines found on the continent. He succeeded in prying out masses of almost pure metallic silver. Being an old acquaintance of Gen. Roberts, of California, Mr. McPherson proceeded at once to report to his old friend. A. Harpending, Roberts and others, immediately secured the services of M. P. Arnold, an experienced miner, to come here and examine the mine. There being no troops at this place that could be spared to escort Messrs. Arnold and McPherson, Gov. Safford and some eight or ten of our citizens volunteered to accompany them, and on Tuesday morning started for the locality.

Idaho.

Poorman.—*Tidal Wave*, Sept. 9th: The Poorman mine, which for several months has been considered a "sick man," has blazed out again in full health. A fine vein of excellent ore revealed itself in the south drift of the 400-ft. level on Monday and revived the spirits of those in charge. The vein is three ft. wide.

Big Clean Up.—*Avalanche*, Sept. 4th: The Ida Elmore cleaned up last Monday 1,538 lbs. of amalgam, the product of a week's run of 15 stamps. Besides 200 lbs. of amalgam accumulated in the battery which when retorted will make over 50 lbs. of bullion, worth at the rate of $9 per ounce.

Miners' Meeting.—At a meeting held last Sunday by the claim owners in the district below Wagontown, the claims were laid over until the 15th of next May.

Items.—From the same: The Alison has now a double shaft 175 ft. deep. On Saturday a vein of 18 inches wide was uncovered in the north drift....The Habersbaw has an incline 20 or 40 ft. deep. At the bottom is a 3½ ft. vein....Silver Cord shaft is down 193 ft., and has a 2 ft. ledge of good ore....Empire shaft is 35 ft. deep. Ledge 1½ ft. wide....Starlight has a 40-ft. shaft, and a 2-ft. ledge....In the Red Jacket, a foot vein of very rich rock has been struck, at the depth of 80 ft. The ore resembles that of the Ida Elmore. One of the hands in sinking a post-hole, struck a deposit of rich mineral near the surface, from which $200 worth of specimens were extracted in a few minutes....In the Peck & Porter, hands are timbering up the shaft which is 90 ft. deep. The ledge looks well.

Alturas Co.—Rocky Bar correspondent of Boise City *Statesman*, Aug. 7th: The "Ne Plus Ultra" mine, at Bonaparte Hill, belonging to Craven Lee, is two feet wide, gold free, and prospects exceedingly rich. L. Lincoln, one of the owners of the Ehel mine, has a good 5 stamp mill, with engine, boiler, etc., ready to commence crushing. He has taken out some 250 tons of quartz, which will doubtless average from $35 to $50 per ton.

A private letter from Rocky Bar says the Monarch Co. have bought out the Greenhack Co.—consideration, $300,000. The Casco will make a big clean up in a few days.

The Loon Creek Diggings,—Correspondent Boise *Statesman*, Aug. 30th: There are 500 or 600 men on the creek. The claims that have been tested are confined to the space of a mile, or a mile and a half, and these give evidence of being very rich. A Boise man told me to-night that he saw $5 taken up yesterday in one pan. The gold is coarse, and slugs weighing from $1 to $3 are not uncommon. It is confined to the bedrock of the creek, and a few inches above it. Claims are held at from $3,000 to $10,000 each. The prospecting has been confined to the creek. The mountains are high and rugged.

The same writes from Oro Grande, Sept. 1st: Owing to the manner in which the claim laws of the district were made, and then taken up, by the first comers, there is no ground left for location, although plenty for sale. But in a few weeks the miners will be compelled by the laws to work their ground one day in seven, and much of it will then, I think, be open for relocation, or purchase at low rates. Very little work has been done anywhere. The claims of Varney & Co. are opened, and are running a sluice and working five men. They have thus far made about an ounce per day to the man. From a cut about 35 ft. long and six wide on the bedrock, beginning on the creek bank, they took out $236. This prospects the poorest of any part of the claim. I went into their works this forenoon, and from one pan of dirt, which I took up myself, washed out $2.50, reckoning it at $16 per ounce. It is claimed to be worth at least $18, and is beautiful coarse gold. The men told me that by picking their dirt they could often get from $5 to $15 to the pan. From all I have seen and can learn I am satisfied that when these claims are opened and worked, with the skill with which they work mines in Boise Basin, they will pay from two to four ounces per day to the hand.

The *Statesman* has seen some of the gold. It is coarse, of dark color. It was brought by Mr. J. Armstrong, who, with two others, took up 400 ft. of ground. Mr. Armstrong sold his interest for $2,500. A few days afterwards he offered $2,000 for one-half of what he sold, but it was refused. The men who now hold the claim valued it at $25,000, and think they will be able to take that amount of gold out of the claim this fall.

The *World* of the 2d says that Joe Luckett has come back. He thinks the diggings will not prove extensive, but believes some of the claims very rich. The ground is only rich in spots. Only two claims have been worked, and very little gold has been obtained outside of these two. Nearly all the claim holders try to sell, but will allow no one to prospect before a purchase is completed. Mr. Luckett will not go to Loon Creek again, he thinks.

During the week quite a number of those who went to Loon Creek from this city have returned. Some of them think pretty well of the new camp, and others think otherwise. But all seem to agree that it will not become more than a good small camp.

Montana.

Emigrant Gulch.—Virginia *Republican*, Sept. 3d: The news from Emigrant is most encouraging. In the upper district there are five or six companies operating, chief of which is Culver & Co., the gold yield paying all expenses from the time they first struck gravel. Their drain-race is down 28 feet, at which depth prospects seldom fall below ten cents to the pan, and often reach a dollar, and there is still no bedrock. The miners who have explored the ground are strong in the belief that it will prove equal to the Carihoo diggings. Six miles below Culver & Co. pay gravel is reached at a depth of 30 feet, and the prospects are flattering. Water is abundant and timber near.

From Bannack.—We learn that the mines are all being worked, notwithstanding the water is scarce, and claim owners generally are doing well. Many of the miners who rushed frantically to the new discovery on the Salmon, are rushing frantically back again, and resuming their old places.

Argenta.—Gen. Cummings reports that mining about Argenta is progressing finely, but operations are retarded owing to the scarcity of hands, many having gone to Salmon river. The Atlantic Cable lode, upon which Gen. Cummings' company has been working, is well defined, and presents a crevice of from twelve to fourteen feet in width, filled with very rich ore, and is considered the mother lode of the district. Mr. Rompf is expected to return within ten days, and a new furnace, on the reverberatory plan, will be erected, with an improvement invented by Mr. Rompf.

Bowlder Valley.—Helena *Gazette*, Sept. 2d: The miners are at a standstill for want of water. In the Bowlder ditch, which has a carrying capacity of 1,000 inches, only 150 inches are running.

Quartz in Jefferson County.—Blacker & Keeting have erected an arastra, with two stamps, near the Leviathan lode. Last week they crushed eleven tons of quartz from the Keeting lode, and made a clean up of over $1,300. Fourteen tons of quartz

was crushed at Nave'e arastra last week, taken from the Robert E. Lee, which averaged $45 to the ton.

PHILIPSBURG.—Correspondence of *New North West*, Sept. 3: The St. Louis and Montana Mining Company's mill started up on the 20th August, on 250 tone of rock. No clean up has yet beeu made. The ore will last but a few days longer, and no mining operations will probably he entered upon by that company this season. Thirty dollars per ton for crushing ores, delivered at the mill, does not meet the approbation of the miners. There is now a full supply of rich paying ore in sight for a first-class 20-stamp mill. We have seen no less than thirty tons in which pure native silver is visible in every piece, and in some instances the surface is literally covered with it. Several companies are awaiting advices from mill men now absent. Should either succeed, work will be commenced upon several ledges about the same time. Two thousand tons of fine milling ore can be delivered at any given point in this district in a month's time. A good 20-stamp custom mill in one year, run under proper management, will realize a fortune.

A letter to the above saye that at Silver Bow, in Deer Lodge county, dirt is being hauled two miles to water, and pays $20 per day to the man. There are thousands of acres of ground between Silver Bow and Divide ereeks that will pay from "China wages to $20 per day to the man. All that country is covered by two ditchee (now dry) of L. A. Bernard & Co., who have brought these ditches over the main divide, turning the head-waters of the Missouri into those of the Columbia. The same rich placers exist, and are ready to he worked when water comes, at Butte, High land, German and Frenob gulches, and other portions of the county.

Nevada.

COPE DISTRICT.

RESOURCES LIMITED.—Inland *Empire*, 10th: We yesterday met G. W. Fuller, who has just returned from Cope. He thinks that several of the ledges will pay well for working, but that the resources of the district are too limited to justify any great stampede. Most, if not all of the ledges of any value, have been taken up, which will justify the expense of working.

MINERAL HILL.—Grass Valley *Union*, 11th: A letter was received yesterday from Mr. G. Y. Dorsey, of this place, who wrote from Carlin, at which place he had just arrived from Mineral Hill, the metropolis of the Cope District. He says many persons are flocking into the country, much prospecting is being done, and some of the lodes are showing great richness—having worked as high as $1,200 and $1,500 per ton by mill process. He regards the Cope as the best mining district in the Stato of Nevada, and one from which large returns of bullion will be made in good time.

MILL PURCHASED.—Elko *Independent*, 11th: Col. Drew and Uncle John Atchinson have succeeded in purchasing a mill in San Francisco for Cope District, and Mr. Atchison is now on his way up to go to work on the foundation. The mill is of 10-stamp capacity, and of the latest and most improved pattern, with Haun pans. It is intended to have the mill in operation before the snow falls.

ESMERALDA.

DRY MOUNTAIN MINES.—S. F. *Times*, 14th: A man named Geo. F. Kerst, arrived in the city a few days ago from the Dry Mountain Mining District, near the eastern line of the State, south of Esmeralda. He reports it rich in both gold and silver, some of the ledges being from 20 to 50 feet wide.

HUMBOLDT.

UNIONVILLE.—Cor. *Independent*, Sept. 8th: "The greater part of the inhabitants of this burg are just now in a highly excitable state of mind, attributable to a recent discovery of rich mineral deposits in the East Range, south of Clark & Word's ranch. The ore is unquestionably rich."

UNCLE DAVE.—*Enterprise*, Sept. 7th: Evans' mill at Unionville will be completed in two weeks, and will run on gold ore—chiefly that from tho National mine.

WASHOE.

[In the Stock Circular, in another portion of this paper will be found late mining news from this district.]

LADY BRYAN.—*Enterprise*, 8th: The extent and richness of the ore is exceeding the most sanguine expectations. Although it is but a few weeks since the Empire State mill began work upon it, the yield, up to the end of August, is but a trifle short of $30,000.

YELLOW JACKET.—Same of 12th: The company are still at work cleaniug out their north shaft. The south shaft is yielding about the usual quantity of ore. During the year ending June 30, 1869, the receipts were $1,964,450; the disbursements some $250,000 more. Of late, affairs have much improved, and many debts have been paid up.

LADY BRYAN—This mine is looking better than ever, now taking out 70 tons per day, besides keeping the Empire State mill running and piling up ore for the Lady Bryan mill, which will start about the 20th. Some of the rock will pay at least $150 per ton. The yield for October will not he less than $50,000.

SIERRA NEVADA.—The usual amount of ore is being taken out, and the mill is kept running. They have in sight a great amount, not only of quartz, hut also of paying gravel.

OCCIDENTAL.—Ledge in lower tunnel cut and penetrated four feet. Rock pickable. Ore excellent. Prospects flattering.

OVERMAN.—Sixty tons of ore per day—averaging over $20. Ventilation being imperfect, little can he done in the 500-foot level until the winze is completed.

OPHIR.—Still drifting; now in from shaft 570 feet. A large Root blower has been received and will soon be set up.

HALE & NORCROSS—Is yielding 150 tons per day of good milling ore.

VIRGINIA CONSOLIDATED.—Shaft down 275 feet. Good progress made day and night.

CHOLLAR-POTOSI.—This mine is yielding about 180 tons of ore per day, which mills about $50. They have lately developed a body of ore, however, which will pay $80 or over.

STARTED UP.—Gold Hill *News*, 7th: The Rock Point mill, on Carson River, just below Dayton, which has been shut down for repairs during the last four or five weeks, started into full operation again yesterday.

ATHENS.—Carson *Appeal*, 10th.—A contract has been made to run 50 feet of a shaft. The work will be commenced forthwith.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, Sept. 11th: Our principal mines are getting fairly at work, and the results are seen in the increasing prosperity. The number of men employed in taking out ore is being increased from week to week, as room is made by the extension of the works under ground. Within the next two weeks a material increase will be made by the starting up of the Stanford mill. The Daytou, Tregloan's and one or two other mills will start soon after, which will still further increase the demand for laborers. All our mills are running to their full capacity, and some have engagements that will keep them busy for weeks. The weather is favorable, and teamsters are on the road from morning till night, hauling ore to the mills. Not only are there no signs of our mines giving out as the work of development progresses, but new bodies of ore are being constantly discovered.

LOOKING UP.—*Empire*, 9th: During the past month all the mines have improved in the character of the ore struck. The Big Smoky mill, 20 stamps, which took out $80,000 last month, will, it is confidently asserted, clean up $110,000 this month, owing to the increased richness of the ore. From the other mills like good reports reach us. The mills which will go into operation about the first of October will so increase our bullion shipments as to silence croakers.

WORK IN EARNEST.—Correspondent of San Francisco *Times* writes Sept. 6th: "No less than six draft furnaces for smeltiug are now going up in the Base Range; and I predict the multiplication of such all over that Range. When tho miners see that their carbonates and oxides of silver-bearing ore can be eo easily smelted, and that furnaces for the purpose can be so cheaply erected, they will make the outlay of a hundred dollars cheerfully, and produce their own bullion with their own hands. A large portion of the ore of the Base Range is of a kind requiring no particular skill in its manipulation. The ores increase in richness with increased depth. The Eclipse Consolidated shaft is 112 feet lower at the bottom than that of the Eberhardt, yet has ores equal to any in that. At 80 feet the Miser's Dream assayed $200; the croppings assayed $60. The tenacity with which the assayers stick to White Pine is an infallible index to the richuess of the mines. They, of all others, know from daily observation what these mountains contain. Tho easterly side of Main street, Treasure City, is lined with assay offices; eo is the eoutherly side of Main street, Hamilton. There are several, also, at Shermantown."

ITEMS.—*News*, 7th: Heavy body of ore in Manhattan; as many men as can work to advantage....Twenty-five thousand tons of ore on Aurora Sonth dnmp. The mill will be started about the 15th....9th: Oriflammo Tunnel Co. in Mahogany Cañon, has resumed work. Indications good.... El Dorado will soon send oro to mill. Shaft down 50 ft. Tho men take out 15 or 20 tons daily....Tom Paine improviug. Ore rich. Forty tons sent to mill in two days. ....W. F. & Co. shipped $42,000 bullion from Newark last mouth....Good quartz in Cuba Consolidated—worth, say $65 per ton hy mill....11th: A sale has been effected of a mine on Pogonip Flat to a New York eompany—something over $200,000. ....Mosheimer is shipping about eight tone of coarse bullion weekly; and ie building a large hoarding-house for workmeu. ....12th: Aurora South sends 40 tons to mill daily....Consolidated Chloride Flat, 50; 125 men employed ...Eberhardt employs 25 or 30 men, and is takiug out good ore....Pogonip and Othello has taken out splendid ore this week....*Empire*, 7th: Five tons Morning Star ore, Babylon Hill, yielded at Murphy's mill $82 per ton.... 10th: Gen. Cadwalader thinks Babylon Hill mines as good as those of Treasure Hill.

WEEKLY BULLION.—*Empire*, 12th: There was shipped from White Pine, during the past week, hullion to the amount of $63,-857.26. This is exclusive of the shipments from Newark, and also of the metal hullion shipped from Swansea, which would probably swell the amount to $75,000.

OUTSIDE DISTRICTS.—Correspondent of *Empire*, 8th: The work at Bullion Hill, Robinson District, has been pushed with energy. At 10 ft. from the surface the base metal begius to disappear, and the silver ores undergo a complete change, the sulphides and otber forms of the silver running into rich chloride, giving an assay value of from $492 to $2,000 per ton. We shall probably make our first shipment of bullion early in next month....*Empire* of 12th says of Spring Valley District: We have specimens of ore from the Red, White and Blue, that will assay more than $18,000 to the ton....Patterson District mill was to go into operation on the 13th....Steptoe mine in Kern District, has a 20-stamp mill nearly completed. Shaft 400 ft. deep; just struck water. Ore, 2,000 tons ready for mill....Peermont District,—says the *News* of 7th,—is in the hills 60 miles east of this; 100 miles by trail. Assays range from $7 to $1,700 per ton. Entire ledge shows silver; from 20 to 50 ft. thick.

The Fruits of Labor.

How many of the thousands who will visit the present Fair and he delighted with the magnificent display of machinery, manufactured goods and products of the soil, will reflect that all they see is the product of labor? The genius which invented the powerful engine, that works with such marvelous power and precision, would never have forged his ideas into the mighty parts of his machine, but for the help of labor. The fleecy, snow-white, or exquisitely tinted fabric of wool or cotton which adorn the walls of the pavilion, would not present so many forms and hues but for labor. Tho luscious fruits, the mammoth vegetables and golden grain, would not have reached their admirable excellence but for labor. Tho exquisite pictures on the walls, the sweet flowers which perfume the building with their fragrance had not been here to instruct or please us, but for labor. It is the patient, hard, poorly-paid labor of the multitude that gives form and comeliness to the creations of the mind of genius. It is labor that built the railroad across the continent, over rivers, deserts and mountains. It is labor that erected the telegraph and enabled us to feel the throbbing heart-pulsations of our friends thousands of miles away. It is labor that has made our nation tho foremost in the arts and manufactures. It is labor that bears the burden of the taxation required to sustain the credit of tho nation. Then all honor to labor. Let us encourage our home manufacturos as a token of our respect for our local laborers, and not forget that such fruits of labor as we see around us require the liberal patronage of the public to sustain their cultivation. Every laborer deserves a fair day's wages for a fair day's toil, which we deny him when we refuse to pay a fair price for the fruits of his labor.

The Pavilion.

[From the Daily Fair Press of Sept. 16.]

Notwithstanding the full and timely notice given to the public that the Fair would open promptly upon the day and hour named, great numbers of exhibitors are much behind hand, and although an almost incredible amount of work has been accomplished during the last forty-eight hours, much still remains to be done, before anything is complete. So far as the labor under the immediate direction of the mangers is concerned, all has been done, thoroughly and promptly. Spaces have been properly assigned, and exhibitors have been urged through the public press and by special notices to have them put in order and filled; but at 11 o'clock, Tuesday morning, scoree of hammers, saws, etc., had to he stopped in the midst of their work, while the opening address by Mr. Scott and other inaugurating ceremonies were in progress; and now, as we go to press, at the eve of the second day, the work of preparation is still going on.

The DAILY FAIR PRESS, however, was in position, and the orator had no sooner ceased speaking, than it was set in motion to print the address which had just been pronounced.

In many respects the Pavilion has been altered and refitted, greatly to tho advantage of the exhibitore, and for the increased pleasure and comfort of the thousands who will visit the Fair. An entire new gallery has been added, and the booths, for the salo of fancy articles which have been constructed in the upper gallery, will form quite an attractive feature. The long art gallery, at the western end of the Pavilion, has been divided into three rooms, which afford a much better opportunity for the arrangement and classification of articles. The walls of the picture gallery have been lined with tinted canvas, the subdued hue of which adds much to the effect of the many fine paintings there exhibited. The large fountain has also been refitted and much improved. The grand balcony or first gallery, above the main floor, which extends quite around the center nave, has been provided with seats, for the accomodation of visitors, who after becoming fatigued with the promenade and bustle below, can here find comparative rest and quiet. It also affords an excellent locality from whence to take a bird's-eye view, and contemplate at leisure the busy, stirring scene below.

The Decorations.

The decoration of the Pavilion this year is far superior to anything which has yet been accomplished in that line. Bunting is profusely shown in every direction. The flags of all the principal nations of the world hang suspended from the lofty arch above; while at the sides of the arch and along the front of the galleries flags are gracefully festooned, and all the State shields and escutcheous are prominently displayed at regular intervals. The intermediate spacee or panels bear the names of noted travelers, inventors and scientific men and distinguished mechanics of all nations, among which may be noticed: Washington, Goodyear, Steere, Hoe, Fitch, Arkwright, Ross, Herschel, Magellan, Watt, Hudson, Agassiz, Rittenhouse, Brunel, Kepler, Ericsson, Count Rumford, Fulton, Napier, Stevenson, Swammerdam, Field, Galvani, Beethooven, Liebig, Newton, Gordou, Franklin, Huber, Stanford, Morse, W. Caxton, Audubon, Celteni, Arago, Maria Mitchell, Michael Angelo, Harriet Hosmer, Humboldt, Rosa Bonheur, Archimedes, Torrichel, Raphael, Bernard Pallissy, Columbus, Tredgold. Guttenberg, Carl Ritter, Jacquard, Roebling, Prince Rupert, McCormick, Greenough, Lesseps, Harvey, Cartwright, Ferguson, Howe, Daguerre, Le Fevre. Davy, Shaw, Bowdich, Benjamin, Lussac, Rogers, Alston, Berry, etc., etc.

The names of the past and present Officers and Directors of the Institute are prominently displayed upon canvas upon the western end of the nave or principal end above the lower gallery.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

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Our Agent, Wm. H. Murray, is now on a tour through Siskiyou, Trinity, Shasta, Tehama, Butte and Yuba counties, and will look after the interests of the Press on that route.

San Francisco:
Saturday Morning, Sept. 18, 1869.

Notices to Correspondents.

P. A. M., Portland, Oregon.—Your specimens from east of the mountains, have been sent to a reliable assayer.

M. I. P., Alamos, Sonora, Mex.—The invention inquired about, touching sugar-making on a small scale, was itemized from an Eastern exchange, which did not give names or any further particulars. Will inquire.

Hydraulic Miner, Spanish Ranch.—You will find some items with regard to lights for hydraulic mining in the night, on page 193 of Vol. XVIII, of the Mining Press (March 27th, 1869). The calcium light will do admirably, but is too troublesome and costly for general use in hydraulic mining. The apparatus costs several hundred dollars; the most important part being the oxygen gas generating contrivances, and the gas bag, which, when put together portably, occupy the space of a traveling trunk. It will throw the light many miles with the aid of a parabolic reflector, such as you always see on locomotives. Cost of maintenance for ten hours would probably be five times that of a good large argand lamp. The latter will answer your purpose, with a good reflector. Those on locomotives cost $100, and can be had of Conroy & O'Connor. Further details of calcium light can be had from John Roach, or Houseworth & Co.

Another Moon for the Earth.—A German scientist has recently created a considerable sensation by the publication of a pamphlet, in which he takes the ground that the zodiacal light proceeds from a gaseous ring surrounding the earth at a distance of only a few thousand miles from its surface. This gas, he thinks, is in a state of quiet combustion, but is now fast cooling off, and, as a consequence, will soon burst and aggregate into a globulous mass and form a second moon for the earth, inside of the orbit of our present luminary. His idea is founded on the now generally received theory that all the planets and moons have been formed in that manner. The supposition is possible. We know but little of the cause or constitution of the phenomenon known as the zodiacal light.

Giant Powder in Pipe Clay.—At Rattlesnake Cañon, Sierra County, a horizontal hole, 26 feet long, was drilled into pipe clay overlying pay gravel, by two men in three days, and 100 pounds of Giant powder were put in. It loosened the dirt for seventy-five feet on each side. The entire cost of the blast was $147.

Issuance of a United States Mining Title.

The Enreka mine, belonging to the Watt Brothers and others at Grass Valley, has, according to a telegram received by W. Neely Johnson, Register of the Sacramento Land Office, finally got through the woods on the U. S. mining patent question. We hope that the necessary precedents have now been made for a further practical operation of the law of 1866, such as is demanded by the management of almost every good mining property in the country—and without such unsconscionable delay, or any uncalled for expense. It is true that difficulties in regard to double and triple mining title in this country, have rendered the granting of a U. S. patent necessarily cautious, and slow. The road must now be smoothed, and the expense brought to a minimum. In this the U. S. Surveyor General of California has it in his power to do the country a service.

Van Nostrand's Engineering Magazine.

Another heavy freight train of solid eclectized engineering matter is the September number, a few of the principal articles of which are on—

The Fairlee Steam Carriage *(Mechanics' Magazine);* Accumulated Hydraulic Power; *(Engineer);* Explosions of Nitro-Glycerine *(Engineer);* London Street Railways (Inventors' Institute Proceedings); Test of Agricultural Steam Engines *(Engineering);* Iron Blast Furnaces at Middleborough *(Mining Journal);* Tube Setting *(Practical Mechanics' Journal);* The Measurement of Hills *(Building News);* Dried Wood for Blast Fuel *(Oestreichische Zeitschrift);* Railway Disasters (N. Y. *Times);* Beton Building *(Canadian Builder.)*

Engineering, in its several branches, has assumed in this country something of the definiteness of profession belonging to law or medicine; the rapid development of our industries recently having afforded occasion for the pursuit of specialties by respectable numbers of practical and competent men. Under such a state of things we will make yet more decided progress in our peculiar national field of talent. To engineers, and "take-holders" generally, Van Nostrand's *Magazine* is indispensable. It contains more engineering information than any other publication of the kind in the world. We confess to a feeling of curiosity as to whether the United States, at the present time, possesses a professional engineering constituency compact enough to sustain permanently so thorough an agency of intelligence; but the impression is on our mind that we have it.

Rectangular and Topographical Ranch Boundaries.—Speaking of the U. S. surveys and subdivisions now going forward in the mountain counties of Tuolumne, Calaveras and Amador, on the rectangular basis of the government of course, the Stockton *Independent* disapproves of all but natural boundaries; forgetting that marks of latitude and longitude on lands are exceedingly handy for many purposes, and that natural boundaries can and will be adopted nevertheless, in subsequent surveys made for land purchasers. The Land Office should make provision for segregation of mountainous sections according to topography.

To See the Eclipse in Alaska.—Davidson and Throckmorton, who went to Chilkat River, Alaska, on the U. S. Coast Survey account, to observe the sun's eclipse, are back, and report a hard journey—eleven days of exposure in open boats, in getting to a country where no white man had ever been before. What trouble people are taking now-a-days, for an opportunity to stare the sun in the face.

The work of grading is about finished on the Virginia and Truckee Railroad, and the laying of the rails will soon be commenced.

Humboldt.

The Humboldt centenary in San Francisco, has passed off rather tamely, in all but the concert, which was, of course, good, as Chris. Andres' band and the Sangerbund combined, could not do otherwise than admirably. The address was very common-place—indeed, it seems that about as little of the soul of Humboldt entered into or inspired this three days' festival as could possibly be. Humboldt was a genial, most unpretending worker in the natural sciences, with peculiar ideas and fancies whose foundations were laid deep in his soul, an enthusiast in the application of those principles wherehy individual rocks and minerals, animals and plants, are grouped into species and classes; a passionate lover of landscape; one who found true delight in recognizing the beauties of exact truths and reasonings such as we find in geometry, especially in view of their applications to calculations of results of moment. All he did or knew of natural science, was beyond technicalities, and in the thing itself, on some train of generalization which agreed with the moving springs in his character. Humboldt's is a great and beautiful character, one that will stand in history much like Plato's.

Mezzara's bust on exhibition at the Mechanics' Fair, makes him look an out and out German in expression.

The English Patent Laws.

Frequent allusion has been made to the movement now in progress in England to repeal the patent laws. The *Scientific Review* gives the proceedings of a meeting of workingmen held in London on July 24th, to consider the desirability of such repeal. We have not space for the somewhat excited discussion, in which Sir Roundell Palmer and Mr. Macfie, members of Parliament, took part; but we give the resolutions which were passed, which show the general feeling on the subject. The following is the first of these:

"That the meeting having heard the statements for and against protection for inventions by the existing patent laws, is of opinion that protection is absolutely necessary as a right, by which inventors may be secured a true legitimate right in their inventions."

This was carried by an immense majority, amid loud cheers, only two hands—those of Mr. Macfie, M. P., and Mr. Clarke—being held up against it.

The following resolution was then carried by the same majority, amid tremendous cheering:

"That an amended patent law which would give efficient protection to inventors at a low cost would be of the greatest value to this country, and enable it to maintain its supremacy in the arts."

Molasses Transportation in Bulk.—The brig Novelty has just completed her second voyage from the West Indies to Boston, loaded with molasses in hulk. It is stated that the saving in this second voyage, with a cargo of 87,000 gallons, was about $5,000 over what it would have cost, if it had been brought in packages in the usual way. The figures are large; and if correct, must give the shipper in bulk such an advantage as must work a complete revolution in the business, and must result in a material reduction of one of the prime necessities of life. The further application of this mode of shipment to other liquids, must follow as a matter of necessity.

New Books.—We have received from A. Roman & Co., "The Ruthven Hydraulic Propeller vs. the Screw and Paddle," "Betou-Coignet," by L. F. Beckwith, and "Asphalt and Bitumeu-Macadamized streets," by Arthur Beckwith, which will be noticed hereafter.

The Philadelphia *Gazette* talks of employing Chinese labor in the Lackawana and Wyoming coal mines, by way of lecture to the coal strikers.

Matallurgical Treatment of Refractory Ores.

Many of the Humboldt, Nevada, ores, such as Fall's, on the Southern Ravine, assay $300 to $500 per ton; but being refractory to a large extent, are assorted into two kinds, for milling on the spot, and for shipment to Swansea or Freiberg. Sage brush furnishes fuel for Humboldt steam engines. At San Francisco and at Central City, Col., matte smelting for European extraction, is practiced profitably. This might often be done on the ground, to the advantage of mine owners. We have metallurgical skill enough, of the practical and experienced sort, in this country, now seeking employment, to save us the necessity for shipment abroad, at such loss of time, interest on money, and cost of freight. Our competent metallurgists will not fail to discover, in good enough season, the favorable opportunities where local works for limited purposes may be made a substantial success. The field of "working ores cheaply," in other words, of getting out more by the aid of practical science and skill, is open, large, and free in this country, and will not remain neglected. Of so much miners may rest assured.

Mineral Resources of Japan.—"DeOil," a Yokohama correspondent of the Sacramento *Union*, writes: "It is said that there are very rich gold mines in the immediate vicinity of Nugata, the port of the west coast of Niphon, which has been declared open to foreign trade and commerce, but as yet little noticed by foreigners. Certain it is that petroleum is very plentiful over there. There is no doubt that these islands contain as good a quantity of hard coal as any in the world, although the only kind mined is surface or soft clayey soil of rather a poor quality. They have never worked a coal mine as we do in America, or as it is done in England. The future will see all these developments made; it may be very speedily, for the wisdom and energy of the foreigner who is here now, with all his might and determination, must prevail against the fickle cunning and pusilanimous doctrine of Japanese rulers.

The European Wheat Crop.—There can be no doubt, from late accounts from Europe, but that the present wheat crop there will be behind the average of late years. According to the London *Times*, there will be a large demand upon California wheat to supply the deficiency. This view is furthermore confirmed by the range of prices for the last four months. Since April there has been a pretty steady advance in prices, which have gone up from 9s. 1d. to 11s. 3d.; the last being the quotations of August 19th. As California depends mainly upon Liverpool for her market, these facts would seem to insure a pretty safe and full market for the large crop which is now coming in here.

Combined Carpenters' Tool.—J. Nestor has on exhibition at the Fair a very useful article for carpenters' use, especially in clapboarding, combining a finid level, rule, weather-board block, marking knife, and gauge, all in convenient size for handling and work.

Pharmaceutical Association.—The respectable druggists and physicians of San Francisco have organized into a Society, which will make regulations to prevent adulteration of drugs by quacks.

Another great day is laid ont, some time in October, for the laying of the corner stone of the State University at Berkeley, at which the Masons will assist.

The *The State Fair Gazette* was published daily during the Arigricultural Fair at Sacramento, by H. S. Crocker & Co.

Labor is the grand distinction between civilization and barbarism. Savages never labor.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

FOR THE WEEK ENDING SEPTEMBER 7th.

OVERSHOE.—Addison G. Waterhouse, San Francisco, Cal.

STEAM GENERATOR.—James Stuart, San Francisco, Cal.

PUMPING BY MOTION OF OARS.—Robert R. & E. Clifford Spedden, Astoria, Oregon.

SPOKE TENONING MACHINE.—Frederick H. Brinkkotter, Callahan's Ranch, Cal.

GANG PLOW.—Frank A. Hill, Marysville, Cal.

SELF-ACTING CAR BRAKE.—John W. Swales, San Francisco, Cal.

WHEELS FOR VEHICLES.—Timothy R. Smith, San Francisco, Cal.

AUTOMATIC ASSAYING APPARATUS.—Josiah S. Phillips, San Francisco, Cal.

MAIL BAG.—Zara T. Sweet, Davisville, Cal.

SELF-INDICATING LUBRICATOR.—Nicholas Siebert, Novada, Cal.

ISSUED SEPTEMBER 14th.

IMPROVED SEWING MACHINE NEEDLE.—Mrs. A. H. Supplee, San Francisco, Cal.

SHAFT ATTACHMENT FOR CARRIAGES.—Thomas C. Walter, San Francisco, Cal.

IMPROVED TOOTHWASH.—Pierre Ringpeyron, San Francisco, Cal.

PORTABLE FENCE.—Charles E. Johnson, San Francisco, Cal.

REVERSIBLE DOOR BUTT.—Jefferson Kindleberger and William A. Arnold, San Francisco, Cal., assignor to Inventors' Association of San Francisco, Cal.

SELF-REGULATING LUBRICATOR.—Nicholas Siebert, Nevada, Cal.

CIRCULAR SAWMILL.—David Evans, Eureka, Cal.

IMPROVED VELOCIPEDE.—N. Laudry, San Francisco, Cal.

Mystery in the Tickets.

In the simplest manner, by the aid of Mr. Geo. F. Pardy's device, the Directors of the Fair have declared, and effectually made, the season tickets this year non-transferable. Many have deemed the report concerning the use of such an invention as unfounded, but they can satisfy themselves, if they choose, by trying the experiment of swindling the doorkeepers. Without any more ado than by three or four stamps on your card, the clerk puts down your sex, complexion, approximate age and height, and describes your beard, moustache and whiskers precisely. The ladies are not so closely looked after. Certainly it will not do any longer to attempt to use "one ticket for a whole boarding-house." The stamped season ticket is quite popular as a puzzle, and is not found fault with by honest people. Last year it is estimated that from $5,000 to $10,000 was short, owing to dishonest transfers. Wherever now the personal characteristics are found to disagree with the stamps on the tickets, the latter is confiscated, but the holder is usually supplied with a new ticket answering to his person. This new ticket device is to be patented.

LUMBERING DULL, ETC.—At Puget Sound and other coast lumbering places a great number of logging camps have closed out, and the mills are running on half time. At Truckee, the supply point for Nevada, out of 13 mills only two or three are kept running; but this extraordinary falling off is because the railroad's demand has been supplied. No lumbering, argues no building, no fencing, no venturing.

A VEST POCKET ENGINE.—Chas. O. Farciot, of No. 15 Fremont street, exhibits a perfect steam engine on the FAIR PRESS counter, which stands on the space of a 25-cent piece. See how nicely and perfectly the little marvel runs.

Clark's Detached, Double-Acting Lift and Force Plunger Pump.

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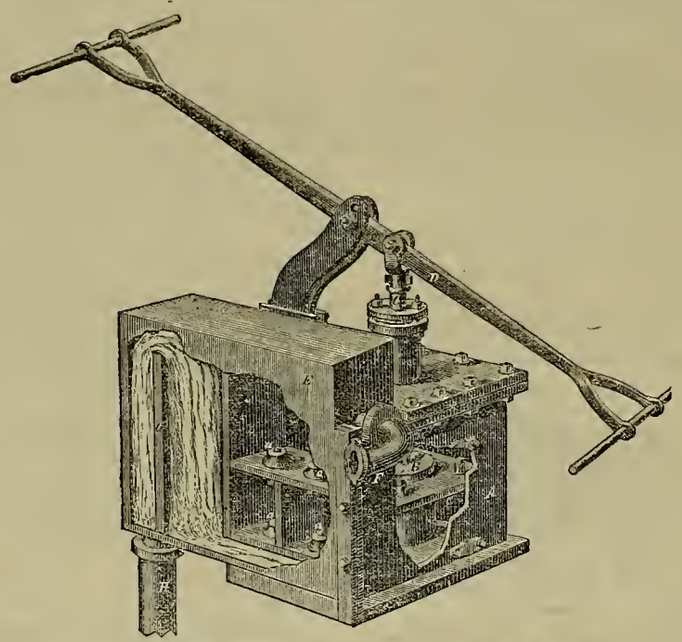

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ANNA E. DICKINSON, one of the very noblest and ablest women of the times, departed for the East on Monday, with the earnest good wishes of a host of new-made friends on the Pacific shores. She numbers her friends among the rich and poor.

State Agricultural Fair Premiums.

These are announced in the Sacramento papers, summing up in cash, to the sum of $30,000. J. S. Curtis, of Yolo, the introducer of peanuts into California, was awarded a diploma, and a $2 premium. The cultivation of peanuts is now quite a business on the Yolo banks, having superseded importation altogether, and retained at least $50,000 a year of our gold in circulation here. The Sacramento hop raisers, Clark, Hanie and Merkeley, obtained special recognition. Mathew Cook received a premium for his blasting wedge, which will be visible, probably, also at the Mechanics Fair in San Francisco; W. B. Ready's three-gang plows; Lansen & Schafer's wine coopering, Mrs. E. F. Aiken's raisins, and C. W. Hoit's figs, were particularly approved; besides which, there is a long list of names meritorious, for apples, pears, figs, potatoes, squashes, cabbages, grain, and stock, both slow and fast, etc.

Gold and Silver Medals.

A gold medal, known as the "Institute Medal," valued at $200, will be awarded to that invention, industrial product, or manufacture, which, in the opinion of the judges, may be thought of the greatest benefit and value to the people of Californiia.

There will also be a gold medal awarded the most valuable display of California products or manufactures, in each of the twenty-one classes, into some one of which everything introduced into the Pavilion is assigned—making 21 in all of the smaller gold medals.

There will also be awarded, as *special premiums*, sixty-three silver medals, which will be apportioned to the adjudged value of the several classes, and articles entered in competition for premiums.

THE COCOS ISLAND TREASURE SEEKERS.—The Panama papers report what is hoped will be the final return to that part of the Cocos Island treasure seekers. This enterprise was first set on foot in this city, some three years ago, since which time about $28,000 has been thrown away upon the foolish enterprise. Hunting for buried treasure, when so much demand exists for labor in really useful and profitable directions, is about the worst use to which money and time can be put.

SMALL MILLS.—Mr. A. B. Paul says: A complete mill to work a few tons per day; that will cost but little, weigh but little, and get more metal out at less expense. We must get over our high-horse ideas of big mills, and no dividends—work less rock and work it better. My motto for the future (and I have had, as you know, experience in large mills), is, small mills and large mines, instead of big mills and small mines, and too often no mines at all. Small institutions worked by miners on coöperative system will build up a country and reward the industrious, when waiting for capital won't pay, and going into large joint-stock institutions will pay less.

EXCURSION FARES.—Half price, or the fare one way only, is charged by all the steamboat, railroad, and stage companies at present, from points in the interior, to San Francisco and back. The "excursion ticket" is a shrewd invention of the carriers themselves, who find it quits as profitable,—in changing retail into wholesale business,—as it is advantageous to the public, on occasions of general migration or congregation.

INTERNATIONAL INDUSTRIAL EXHIBITION AT BUFFALO.—The Canadians, preparatory to annexing the United States, are cultivating industrial and commercial relations to pave the way, by the International Industrial Fair, which is to open shortly, in October,—before our Mechanics' Fair closes. Horace Greeley will deliver the opening address.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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Our Agents.

Our Friends can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

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Omaha, N. T.—Barkalow & Brothers.
London—George Street, 30 Cornhill, E. C.
Henson & Menet, 41 Park Row, New York.
A. C. Knox, City Soliciting and Collecting Agent.

Our Agent, Wm. H. Murray, is now on a tour through Siskiyou, Trinity, Shasta, Tehama, Butte and Yuba counties, and will look after the interests of the Press on that route.

San Francisco:

Saturday Morning, Sept. 18, 1869.

Notices to Correspondents.

P. A. M., Portland, Oregon.—Your specimens from east of the monntains, have heen sent to a reliable assayer.

M. I. P., Alamoe, Sonora, Mex.—The invention inquired ahout, touching sugar-making on a small scale, was itemized from an Eastern exchango, which did not give names or any further particulars. Will inquire.

Hydraulic Miner, Spanish Ranch.—Yon will find some items with regard to lights for hydraulic mining in the night, on page 193 of Vol. XVIII, of the Mining Press (March 27th, 1869). The calcium light will do admirably, hut is too troublesome and costly for general use in hydraulic mining. The apparatns costs several hundred dollars; the most important part heing the oxygen gas generating contrivances, and the gas hag, which, when put together portahly, occupy the space of a traveling trunk. It will throw the light many miles with the aid of a parabolic reflector, such as yon always see on locomotives. Cost of maintenance for ten hours would prohahly be five times that of a good large argand lamp. Tho latter will answer your purpose, with a good reflector. Those on locomotives cost $100, and can he had of Conroy & O'Connor. Further details of calcium light can be had from John Roach, or Houseworth & Co.

Another Moon for the Earth.—A German scientist has recently created a considerahle sensation by the puhlication of a pamphlet, in which he takes the ground that the zodiacal light proceeds from a gaseous riug surrounding the earth at a distance of only a few thousand miles from its surface. This gas, he thinks, is in a state of quiet comhustion, hut is now fast cooling off, aud, as a consequence, will soon hurst and aggregate into a globulous mass and form a secoud moon for the earth, inside of the orhit of our presont luminary. His idea is founded on the now generally rceeived theory that all the planets and moons have heen formed in that manner. The supposition is possihle. We know but little of the cause or constitution of the phenomenon knowu as the zodiacal light.

Giant Powder in Pipe Clay.—At Rattlesnake Cañon, Sierra County, a horizontal hole, 26 feet long, was drilled into pipe clay overlying pay gravel, hy two men in three days, and 100 pounds of Giant powder were put in. It loosened the dirt for seventy-five feet on each side. The entire cost of the hlast was $147.

Issuance of a United States Mining Title.

The Eureka mine, helonging to the Watt Brothers and others at Grass Valley, has, according to a telegram received hy W. Neely Johnson, Register of the Sacramento Land Office, finally got through the woods on the U. S. mining patent qnestion. We hope that the necessary precedents have now heen made for a further practical operation of the law of 1866, such as is demanded hy the management of almost every good mining property in the conntry—and without such unsconscionahle delay, or any uncalled for expense. It is true that difficulties in regard to douhle and triple mining title in this country, have rendered the granting of a U. S. patent necessarily cautious, and slow. The road must now he smoothed, and the expensc hrought to a minimum. In this the U. S. Surveyor General of California has it in his power to do the country a service.

Van Nostrand's Engineering Magazine.

Auother heavy freight train of solid eclectized engineering matter is the September nnmher, a few of the principal articles of which are on—

The Fairlee Steam Carriage *(Mechanics' Magazine);* Accumulated Hydraulic Power; *(Engineer);* Explosions of Nitro-Glycerine *(Engineer);* London Street Railways (Inventors' Institute Proccedings); Test of Agricnltnral Steam Engines *(Engineering);* Iron Blast Furnaccs at Middlehorough *(Mining Journal);* Tuhe Setting *(Practical Mechanics' Journal);* The Measurement of Hills *(Building News);* Dried Wood for Blast Fuel *(Oestreichische Zeitschrift);* Railway Disasters (N. Y. *Times);* Beton Building *(Canadian Builder.)*

Engineering, in its several hranches, has assumed in this country something of the definiteness of profession helonging to law or medicine; the rapid development of our indnstries recently having afforded occasion for the pursuit of specialties hy respectahle numbers of practical and competent men. Under such a state of things we will make yet more decided progress in onr peculiar national field of talent. To engineers, and "take-holders" generally, Van Nostrand's *Magazine* is indispensahle. It contains more engineering information than any other puhlication of the kind in the world. We confess to a feeling of cnriosity as to whether the United States, at the present time, possesses a professional engineering constituency compact enough to sustain permanently so thorough an agency of intelligence; hnt the impression is on our mind that we have it.

Rectangular and Topographical Ranch Boundaries.—Speaking of the U. S. surveys and suhdivisions now going forward in the mountain conties of Tuolumne, Calaveras and Amador, on the rectangular basis of the government of course, the Stockton *Independent* disapproves of all hut natural boundaries; forgetting that marks of latitude and longitude on lands are exceedingly handy for many purposes, and that natural bouudaries can and will be adopted nevertheless, in suhsequent surveys mado for land purchasers. The Land Office should mako provision for segregation of mountainous sections according to topography.

To See the Eclipse in Alaska.—Davidson and Throckmorton, who went to Chilkat River, Alaska, on the U. S. Coast Survey account, to ohserve the sun's eclipse, are hack, and report a hard jonrney—eleven days of exposure in open boats, in getting to a country where no white man had ever heen before. What trouhle people are taking now-a-days, for an opportunity to stare the sun in the face.

The work of grading is about finished on the Virginia and Truckee Railroad, and the laying of the rails will soon be commenced.

Humboldt.

The Hnmholdt centenary in San Francisco, has passed off rather tamely, in all hut the concert, which was, of course, good, as Chris. Andres' hand and the Sangerhnnd combined, could not do otherwise than admirably. The address was very common-place—indeed, it seems that about as little of the soul of Humboldt entered into or inspired this three days' festival as could possibly he. Humholdt was a genial, most unpretending worker in the natural sciences, with peculiar ideas and fancies whose foundations were laid deep in his sonl, an enthusiast in the application of those principles wherehy individual rocks and minerals, animals and plants, are grouped into species and classes; a passionate lover of landscape; one who found trne delight in recognizing the beauties of exact truths and reasonings such as we find in geometry, especially in view of their applications to calculations of results of moment. All he did or knew of natural science, was heyond technicalities, and in the thing itself, on some train of generalization which agreed with the moving springs in his character. Humholdt's is a great and heautiful character, one that will stand in history much like Plato's.

Mezzara's hust on exhihition at the Mechanics' Fair, makes him look an out and out German in expression.

The English Patent Laws.

Frequent allusion has heen made to the movement now in progress in England to repeal the patent laws. The *Scientific Review* gives the proceedings of a meeting of workingmeu held in London on July 24th, to consider the desirability of such repeal. We have not space for the somewhat excited discussiou, in which Sir Roundell Palmor and Mr. Macfie, members of Parliament, took part; hut we give the resolutions which were passed, which show the general feeling on the suhject. The following is the first of these :

"That the meeting having heard the statements for and against protection for inventions by the existing patent laws, is of opinion that protection is absolutely nccessary as a right, by which inv. ntors may he secured a true legitimate right in their inventions."

This was carried by an immense majority, amid loud cheers, only two hands—those of Mr. Macfie, M. P., and Mr. Clarke—heing held np against it.

The following resolution was then carried hy the same majority, amid tromendous cheering :

"That an amended patent law which would give efficient protection to inventors at a low cost would be of the greatest value to this country, and enahle it to maintain its snpremacy in the arts."

Molasses Transportation in Bulk.—The hrig Novelty has just completed her eecond voyage from the West Indies to Boston, loaded with molasses in hulk. It is stated that the saving in this second voyage, with a cargo of 87,000 gallons, was ahout $5,000 over what it would have cost, if it had heen hrought in packages in the usual way. The figures are large; and if correct, must give the shipper in hulk such an advantage as mnst work a complete revolution in the husiness, and must result in a material reduction of one of the prime necessities of life. The further application of this mode of shipment to other liquids, must follow as a matter of ncessity.

New Books.—We have received from A. Roman & Co., "The Ruthven Hydraulic Propeller vs. the Screw and Paddle," "Beton-Coignet," by L. F. Beckwith, and "Asphalt and Bitumen-Macadamized streets," by Arthur Beckwith, which will he noticed hereafter.

The Philadelphia *Gazette* talks of employing Chinese labor in the Lackawana and Wyoming coal mines, hy way of lecture to the coal strikers.

Matallurgical Treatment of Refractory Ores.

Many of the Humholdt, Nevada, ores, snch as Fall's, on the Southern Raviue, assay $300 to $500 per ton; but heing refractory to a large extent, are assorted into two kinds, for milling on the spot, and for shipment to Swansea or Freiherg. Sage brush furnishes fuel for Humboldt steam engines. At San Francisco and at Central City, Col., matte smelting for European extraction, is practiced profitahly. This might often be done on the ground, to the advantage of mine owners. We have metallnrgical skill enough, of the practical and experienced sort, in this country, now seeking employment, to save us the necessity for shipment ahroad, at such loss of time, interest on money, and cost of freight. Our competent metallurgists will not fail to discover, in good enongh season, the favorahle opportunities where local works for limited purposes may he made a substantial success. The field of "working ores cheaply," in other words, of getting out more hy the aid of practical science and skill, is open, large, and free in this country, and will not remain neglected. Of so much miners may rest assured.

Mineral Resources of Japan.—"DeOil," a Yokohama correspondent of the Sacramento *Union*, writes: "It is said that there are very rich gold mines in the immediate vicinity of Nugata, the port of the west coast of Niphon, which has heen declared open to foreign trade and commerce, hut as yet little noticed hy foreigners. Certain it is that petrolcum is very plentiful over there. There is no douht that these islands contain as good a quantity of hard coal as any in the world, although the only kind mined is surface or soft clayey soil of rather a poor quality. They have never worked a coal mine as we do in America, or as it is done in England. The futuro will see all these developments made; it may be very speedily, for the wisdom and energy of the foreigner who is here now, with all his might and determination, must prevail against the fickle cunning and pusilanimous doctriue of Japanese rulers.

The European Wheat Crop.—There can he no doubt, from late accouuts from Europe, but that the present wheat crop there will he hehind the average of late years. According to the London *Times*, there will he a large demand upon California wheat to supply the deficiency. This view is furthermore confirmed by the range of prices for the last four months. Since April there has been a pretty steady advance in prices, which have gone up from 9s. 1d. to 11s. 3d.; the last heing the quotations of August 19th. As California depends mainly upon Liverpool for her market, these facts would seem to insure a pretty safe and full market for the large crop which is now coming in here.

Combined Carpenters' Tool.—J. Nestor has on exhibition at the Fair a very useful article for carpenters' use, especially in clapboarding, combining a fluid level, rule, weather-hoard block, marking knife, and gauge, all in convenient size for handling and work.

Pharmaceutical Association.—The respectahle druggists and physicians of San Francisco have organized into a Society, which will make regulations to prevent adulteration of drugs by quacks.

Another great day is laid out, somo time in October, for the laying of the corner stone of the State University at Berkeley, at which the Masons will assist.

The *The State Fair Gazette* was puhlished daily during the Arigricultural Fair at Sacramento, hy H. S. Crocker & Co.

Labor is the grand distinction between civilization and harharism. Savages never labor.

Inventions and Patents.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

Copies of U. S. Patent Claims furnished immediately at small cost. Full copies of American or Foreign Patents can be obtained by telegraph or mail through this office at favorable rates.

FOR THE WEEK ENDING SEPTEMBER 7th.

OVERSHOE.—Addison G. Waterhouse, San Francisco, Cal.

STEAM GENERATOR.—James Stuart, San Francisco, Cal.

PUMPING BY MOTION OF OARS.—Robert R. & E. Clifford Spedden, Astoria, Oregon.

SPOKE TENONING MACHINE.—Frederick H. Brinkkotter, Callahan's Ranch, Cal.

GANG PLOW.—Frank A. Hill, Marysville, Cal.

SELF-ACTING CAR BRAKE.—John W. Swales, San Francisco, Cal.

WHEELS FOR VEHICLES.—Timothy R. Smith, San Francisco, Cal.

AUTOMATIC ASSAYING APPARATUS.—Josiah S. Phillips, San Francisco, Cal.

MAIL BAG.—Zara T. Sweet, Davisville, Cal.

SELF-INDICATING LUBRICATOR.—Nicholas Siebert, Nevada, Cal.

ISSUED SEPTEMBER 14th.

IMPROVED SEWING MACHINE NEEDLE.—Mrs. A. H. Supplee, San Francisco, Cal.

SHAFT ATTACHMENT FOR CARRIAGES.—Thomas C. Walter. San Francisco, Cal.

IMPROVED TOOTHWASH.—Pierre Ringpeyron, San Francisco, Cal.

PORTABLE FENCE.—Charles E. Johnson, San Francisco, Cal.

REVERSIBLE DOOR BUTT.—Jefferson Kindleberger and William A. Arnold, San Francisco, Cal., assignor to Inventors' Association of San Francisco, Cal.

SELF-REGULATING LUBRICATOR.—Nicholas Siebert, Nevada, Cal.

CIRCULAR SAWMILL.—David Evans, Eureka, Cal.

IMPROVED VELOCIPEDE.—N. Landry, San Francisco, Cal.

Mystery in the Tickets.

In the simplest manner, by the aid of Mr. Geo. F. Pardy's device, the Directors of the Fair have declared, and effectually made, the season tickets this year non-transferable. Many have deemed the report concerning the use of such an invention as unfounded, but they can satisfy themselves, if they choose, by trying the experiment of swindling the doorkeepers. Without any more ado then by three or four stamps on your card, the clerk puts down your sex, complexion, approximate age and height, and describes your beard, moustache and whiskers precisely. The ladies are not so closely looked after. Certainly it will not do any longer to attempt to use "one ticket for a whole boarding-house." The stamped season ticket is quite popular as a puzzle, and is not found fault with by honest people. Last year it is estimated that from $5,000 to $10,000 was short, owing to dishonest transfers. Wherever now the personal characteristics are found to disagree with the stamps on the tickets, the latter is confiscated, but the holder is usually supplied with a new ticket answering to his person. This new ticket device is to be patented.

LUMBERING DULL, ETC.—At Puget Sound and other coast lumbering places a great number of logging camps have closed out, and the mills are running on half time. At Truckee, the supply point for Nevada, out of 13 mills only two or three are kept running; but this extraordinary falling off is because the railroad's demand has been supplied. No lumbering, argues no building, no fencing, no venturing.

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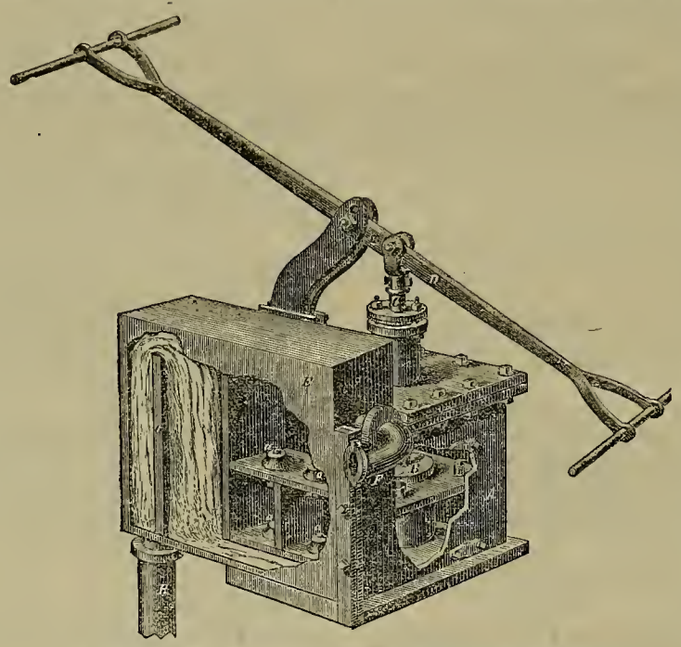

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ANNA E. DICKINSON, one of the very noblest and ablest women of the times, departed for the East on Monday, with the earnest good wishes of a host of new-made friends on the Pacific shores. She numbers her friends among the rich and poor.

State Agricultural Fair Premiums.

These are announced in the Sacramento papers, summing up in cash, to the sum of $30,000. J. S. Curtis, of Yolo, the introducer of peanuts into California, was awarded a diploma, and a $2 premium. The cultivation of peanuts is now quite a business on the Yolo banks, having superseded importation altogether, and retained at least $50,000 a year of our gold in circulation here. The Sacramento hop raisers, Clark, Hanio and Merkeley, obtained special recognition. Mathew Cook received a premium for his blasting wedge, which will be visible, probably, also at the Mechanics Fair in San Francisco; W. B. Ready's three-gang plows; Lanseu & Schafer's wine coopering, Mrs. E. F. Aiken's raisins, and C. W. Hoit's figs, were particularly approved; besides which, there is a long list of names meritorious, for apples, pears, figs, potatoes, squashes, cabbages, grain, and stock, both slow and fast, etc.

Gold and Silver Medals.

A gold medal, known as the "Institute Medal," valued at $200, will be awarded to that invention, industrial product, or manufacture, which, in the opinion of the judges, may be thought of the greatest benefit and value to the people of California.

There will also be a gold medal awarded the most valuable display of California products or manufactures, in each of the twenty-one classes, into some one of which everything introducted into the Pavilion is assigned—making 21 in all of the smaller gold medals.

There will also be awarded, as *special premiums*, sixty-three silver medals, which will be apportioned to the adjudged value of the several classes, and articles entered in competition for premiums.

THE COCOS ISLAND TREASURE SEEKERS.—The Panama papers report what is hoped will be the final return to that part of the Cocos Island treasure seekers. This enterprise was first set on foot in this city, some three years ago, since which time about $28,000 has been thrown away upon the foolish enterprise. Hunting for buried treasure, when so much demand exists for labor in really useful and profitable directions, is about the worst use to which money and time can be put.

SMALL MILLS.—Mr. A. B. Paul says: A complete mill to work a few tons per day; that will cost but little, weigh but little, and get more metal out at less expense. We must get over our high-horse ideas of big mills, and no dividends—work less rock and work it better. My motto for the future (and I have had, as you know, experience in large mills), is, small mills and large mines, instead of big mills and small mines, and too often no mines at all. Small institutions worked by miners on coöperative system will build up a country and reward the industrious, when waiting for capital won't pay, and going into large joint-stock institutions will pay less.

EXCURSION FARES.—Half price, or the fare one way only, is charged by all the steamboat, railroad, and stage companies at present, from points in the interior, to San Francisco and back. The "excursion ticket" is a shrewd invention of the carriers themselves, who find it quite as profitable,—in changing retail into wholesale business,—as it is advantageous to the public, on occasions of general migration or congregation.

INTERNATIONAL INDUSTRIAL EXHIBITION AT BUFFALO.—The Canadians, preparatory to annexing the United States, are cultivating industrial and commercial relations to pave the way, by the International Industrial Fair, which is to open shortly, in October,—before our Mechanics' Fair closes. Horace Greeley will deliver the opening address.

HOT AIR TO BE SOLD AS GAS IS SOLD. Experiments are being made in Springfield, Mass., by a gentleman formerly eugaged in the U. S. Arsenal in that place, to test the practicability of supplying a city with hot air, as gas or water is now supplied, by pipes. The plan is to pass a great number of large iron tubes through furnaces, much after the manner of arranging the hot air blast for iron furnaces. These metal tubes will be connected with mains, constructed of a peculiar cement or fire-clay, which will be made of the most perfect non-conductors attainable for such purposes, and thus led through the main streets of a city, and delivered, by service pipes, whenever reqnired. It is proposed to lay the main pipes in a brick arch, lined with the same non-conducting material as that from which the pipes are to be constructed. It is claimed by the projector, that if the plan succeeds as well as it now promises, the cost of heating dwellings in cities can be greatly reduced; and, if required, can be furnished hot enough for cooking purposes. It is proposed that the air shall leave the furnaces at a temperature of 600° Fah. Baking, which requires the highest temperature of any cooking operation, can be carried on in an atmosphere of from 250° to 350°.

THE POISONOUS TOMATO WORM STORY has again started on its usual annual round. Somebody has found oue in San Leandro, aud sent it to the *Gazette* office, in a bottle. The *Hearth and Home*, a paper generally very correct in its statements, has given countenance to the reported poisonous nature of this worm. The sting, bite, or poisonous nature of the tomato worm is all bosh. It will bite nothing but the plant on which it feeds, and has no more sting than a tadpole. It is an ugly, disgusting looking worm; but if any unpleasant effects follow its handling or accidental contact, don't attribute them to the worm—look to something else for the cause.

ABSURD.—The editors of the Cincinnati and St. Louis papers, who are making great efforts to effect a removal of the national capital to those cities, urge as an inducement that congressmeu can get pure water at either of them. What do congressmen want with water? They are not fishes. It is the height of absurdity to think of tempting congressmen hy offeriug them water. Whisky-straight is as powerful a lever to move *them* as a bunch of carrots is as a motive power to a hungry donkey.

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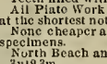
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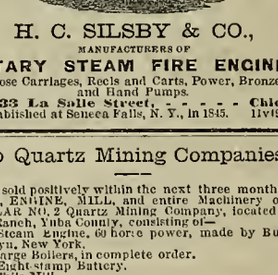
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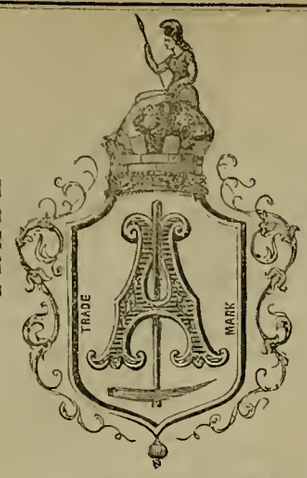

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B ROTHSCHILD, Secretary 20v17-3m

HAYWARD & COLEMAN

IMPORTERS AND REFINERS

—OF—

Illuminating, Lubricating,

—AND—

PAINT OILS,

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!

An elegant and complete assortment.

SOLE IMPORTERS OF

Devoe's Illuminating Oil

PATENT CANS.

6v17-tf 414 Front street, San Francisco.

ELECTROTYPE ENGRAVINGS, CUTS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State

Ayer's Hair Vigor,

For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

HAIR DRESSING,

nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.

Prepared by Dr. J. C. Ayer & Co.,

PRACTICAL AND ANALYTICAL CHEMISTS,

LOWELL, MASS.

PRICE $1.00.

Sold by all druggists and dealers in medicine every where. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18eowim

REMOVED.

The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. 118, 120 and 122 FRONT STREET, one door from southeast corner of California street.

July 11, 1869. BLAM & HOWES.
4v19-3m

THE GIANT

POWDER COMPANY

Is now prepared to fill all orders for

GIANT POWDER,

Put up in Boxes, either in Bulk or in Car tridges.

General Agents,

BANDMANN, NIELSEN & CO.,

25v16-3m 210 Front street, San Francisco.

CALIFORNIA TRUST COMPANY.

421 California St., San Francisco.

Capital, - - - - - $1,000,000.

HENRY L. DAVIS, President.
D. W. C. THOMPSON, Cashier.

This Company will transact all kinds of legitimate banking business on the most favorable terms.

Deposits received and accounts kept in Gold and Silver coin, or National currency, payable in kind.

Exchange drawn on New York in Gold or currency, available at par in any part of the United States, and exchange furnished on Europe, India, China, etc., at lowest rates.

Collections and Disbursements made at all accessible points, and proceeds remitted without delay.

Interest allowed on Certificates of Deposit, Savings Accounts, Trust Funds, and on average daily balances of desirable check accounts.

Money to loan on U. S. Bonds, State, City and County Bonds, Local Stocks, Staple Merchandise, Real Estate and other good Securities.

The Company will act as correspondent for Banks and Bankers, and as agent in the transaction of all kinds of financial and trust business.

Bonds, Stocks, Papers, Jewelry, Silverware, etc., kept on special deposit in its large fire and burglar-proof vaults and safes, at moderate charges.

Trustees:

Henry H. Haight,	John Currey,
William H. Sharp,	John H. Baird,
Jacob C. Johnson,	Chas. W. Hathaway,
Henry Barroilhet,	John O. Eldridge,
Samuel Grim,	Henry L. Davis,
Charles J. Dering,	Donald McLennan,
Charles M. Plum,	Moses Rosenbaum,
Walter B. Cummings,	Henry J. Booth,
S. Heydenfeldt,	P. S. Wenzinger,
Wm. Blackwood,	Henry C. Lee.

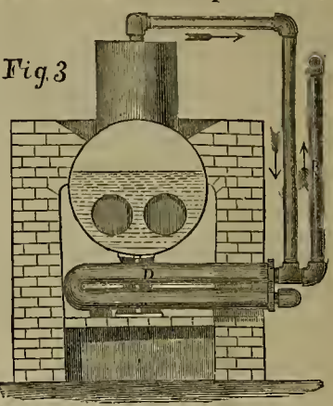
New York Correspondent,
First National Bank of New York.

Important to every one using Steam for any purpose.

CARVALHO'S

Patent Steam Superheater

Fig. 3



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure! Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1866.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhanst more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming."

CROCKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 55° deg—an increase of 200 deg."

CAREY MANUF. Co., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

"Superheater saves at least 25 per cent in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming."

CONTRA COSTA LAUNDRY, Oakland, July, 1868

"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. Co., Cal., August, 1868.

"Superheater causes a use of 40 lbs. steam instead of 60 lbs.; use much less water, and there is a saving of fuel." (2 sets.)

SIXTH MECHANICS' INST. FAIR, S. F. Sept. 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ten, or 25½ per cent. in fuel; engine works better."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.
JOHN L. CONSTABLE, Engineer. 25v18tf

MEUSSDORFFER,

HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL.

535 and 537 Commercial street.....San Francisco
125 J street.....Sacramento.
Corner of D and Second streets.....Marysville.
72 Front street.....Portland, Oregon.

Our wholesale House, 623 Commercial street, extending through to 537 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 23v16-3m

Wonderful Invention!—To Housekeepers!

NEW METHOD OF

WASHING CLOTHES

WITHOUT LABOR.

JOHN REIST'S Celebrated Patent Automatic

CLOTHES WASHER AND BOILER.

This Boiler is most effectual, reliable, and universally recommended; and is the first SELF-ACTING, PORTABLE WASH BOILER, for household purposes ever made, and strange to say, has never been improved, as nearly all others, "which are infringements," have proved total failures. See decision U. S. Patent Office, November 6, 1863. See its wonderful operation and you cannot do without it. WM. FRIEL, Agent for San Francisco,
Dealer in Stoves and Tinware.
25v1 3m 67 and 69 Fourth st., bet. Mission and Jesse sts

The Railroad War—Tolls on Railroads.

The railroad war in New York has been called the work of a set of barbarians. The conduct of the principal actors, in those disgraceful scenes, has certainly been barbarous and outrageous. Railroad "operators" and monopolists may eventually find the end of their string and come to grief.

It was once, and we believe still remains a mooted question, whether railroads may not be brought under the regulations of toll-roads, the laws applicable to which allow any man to run his carriage or car over them, on the payment of toll. If we are not mistaken, the principle involved in the claim set up by John W. Richmond, of Providence, R. I., some thirty-five years ago, of his right to run cars of his own over the Boston and Providence Railroad, has never yet been adjudicated in any court. Dr. Richmond built his depots at each end of the Boston and Providence road; placed his engines and cars upon short branch tracks, connecting with either end of that road, and called upon the Massachusetts Legislature to fix the tolls and proper running regulations for his cars. The lawyers looked into the matter upon both sides, and there appeared to be every probability that the Doctor would soon be running an opposition to the company upon their own road. If we are not mistaken, the company, rather than risk a suit, bought the Doctor off and paid him liberally for his "improvements." If private property is taken for public use, why have not the public a right to such use—why should it be exclusively confined to a privileged few? The signs of the times indicate that the telegraph must soon pass out of the hands of monopolists. Railroads may soon follow—the project is extremely simple and eminently practical. The end would be the addition of untold millions to the wealth of the country, as the result of cheaper transportation.

Mr. Franklin's Newspaper.

[From the Mechanics' Fair Daily Press.]

We desire to say a word of encouragement for our cotemparary, the *New England Courant*, which is printed and sold in this vicinity (where advertisements are taken in), by Mr. Benjamin Franklin, a young man of sound judgment, as appears sufficiently evident from the quality and dishing up of his news. We think that Mr. Franklin is just a little slow in his method of inking his type, with buckskin balls, though he may be doing as good work, perhaps, as others can lay claim to with their new fangled printing contrivances. Mr. Franklin's Limner, we will ventnre the opinion, goes out sketching when the weather is too foggy; his horse, and his ship, and his young damsel do not look quite natural to us—unless the draught was taken very early in the morning. Everybody, however, will admit that he cuts tastefully.

"No generous and impartial Perfon," says Mr. Franklin, "can blame the prefent Undertaking, which is defigned purely for the Diverfion and Merriment of the Reader. Pieces of Pleafantry and Mirth have a secret charm in them to allay the Heats and Tumours of our Spirits, and to make a Man forget his reftlefs refentments. They have a strange power to tune harfh Diforders of the Soul, and reduce us to a sereue and placid State of Mind." In this sentiment the publisher of the Fair Press heartily concurs.

We must find fault with the proof-reader of the *Courant* for his carelessness with regard to figures; according to his blundering head lines, this Fair is being held in A. D. 1723! Where were we in 1753? Shades of Drake! That was the period when the East India House was built; when George I, Prince of Orange, only recently called over the water from Hanover, was King. The Fair Press has it A. D. 1869. His Majesty's most gracious speech, quoted in the *Courant*, does not refer to George I, but is merely another product of the Emperor Norton's.

In regard to the name, *The New England Courant*, Mr. Franklin has exercised a good choice, for what other name would sound so well in New Albion? We should have called it *The New Albion Courant*, which amounts to the same. It is safe to predict for our friend's Undertaking a general Acceptance in Town and Country.

Mr. Newell delivers the *Courant* to its patrons. E. F. Hartshorn, of Cubery & Co., is the responsible publisher.

A Railroad to be Illuminated.—It is reported that Fisk is going to light the Erie Railway with the electric light. He has commissioned E. C. Morse to make the arrangements. It is said that the work will be completed in three months. Mr. Morse claims to have made several inventions in connection with this light. It is said that in the project alluded to the electricity used to run the lamps will be collected by the friction of the wheels of the train.

From Across the Plains.—Mr. W. F. Herrick, who went East as agent for the Mechanics' Institute Fair, returned on Monday. He reports quite a number of interesting things for the exhibition, amongst them a Pullman car, which is coming to the Fair via Livermore Pass, San Jose and the street railroads, as ocular evidence of through connection.

Locher Steam Plow.—The model of this plow is to be seen at the right of the entrance of the Pavilion. It has attracted universal attention at the State Fair. It is a complete working model with four drivers, and the soil is turned over the same as by an ordinary plow. *

British Letters Patent.

The invention must be new in the kingdom, but may have been used and published abroad at the date of application. An invention patented in America may be secured at any time during the life of such prior patent. The application must be limited to one invention. The invention must be useful to support a patent, and there is a *nominal* investigation of its merits, by the law officer—Attorney or Solicitor General.

The actual inventor or first importer—a native or foreigner—and the resident legal representative of a deceased applicant, may become a patentee. The first importer or communicator need not be the actual inventor, or even meritoriously connected with the invention. There is generally no remedy for the actual foreign inventor who has been anticipated in his application by a first importer or communicator. A joint inventor cannot secure a patent in his own name, but may, when residing abroad, singly communicate the invention. A minor or married woman may secure a patent. It is for many reasons advisable to secure British patents in the name of a resident agent.

The first stage of a patent is "provisional protection." The invention is protected from date of filing. To complete the patent, "notice to proceed" must be given within four months, "warrant and seal" be applied for within five and a half, and "complete specification" filed within six months when not lodged with the petition. The application may be abandoned at any stage. The invention may be worked and negotiated under the "provisional protection," but an assignment cannot be recorded or properly made before the issue of the patent. The grant of the patent may be opposed within three weeks of the publication of "notice to proceed." The patent *may* be completed two months from first application. A limited extension of time may be obtained for taking the several steps when failure has arisen from accident or death of applicant. No model or specimen can be deposited. No patent of addition is granted, but disclaimers are allowed, and a duplicate patent, in case of the loss of the original, may be obtained. The patent is granted for fourteen years, but expires with a prior foreign patent. An extension, not exceeding fourteen years, is sometimes granted, or the patent may be annulled for good reasons. A stamp duty is payable at the end of the third and seventh years of the patent. The patent-right does not extend to the Colonies. An assigoment, to convey the title, must be recorded. The patented invention may be freely imported, subject to the revenue laws. Either joint patentee may make and sell the patented article for his sole benefit. The law does not require the invention to be worked. The patent right extends throughout Great Britain, Ireland and Scotland.

French Letters Patent.

The invention must be new in the empire, and should not have been made public use of abroad, at the date of application. The invention must be industrial, and not opposed to the laws, public safety, or morals. Medicines, remedies, financial and credit schemes are not patentable. There is no official investigation to determine the novelty or utility of the invention.

The inventor or author—a native or foreigner—may obtain a patent. The proprietor of an invention, though not the actual inventor, may now legally become a patentee. A corporation or firm may also obtain a patent. Joint inventors should join in the application. A patentee or registered assignee may obtain a certificate of additional improvements.

There is no provisional protection—the application must be made complete. The invention is protected from the day of filing the petition. The application is secret, and no opposition can be entered. No model or specimen is required. The patent is issued about four months after application, and extends over the colonies. A patent grants the right to freely make, use, and vend, but not to import the invention. The courts are inclined to sustain patents, and the laws are severe against infringers. The patent is granted for fifteen years, but expires with a prior foreign patent. No extension is allowed. A tax is payable annually in advance—no days of grace. The invention must be worked [or samples offered for sale] within two years of date of patent, and a "permit" is requisite to introduce a specimen.

Belgian Letters Patent.

The invention must be industrial. The invention must not have been commercially worked in the kingdom, or fully described in any Belgian publication before the date of application. The prior working or publication abroad does not affect the patent. There is no official investigation to determine the novelty or utility of the invention.

The actual inventor—a native or foreigner—or the assignee of the foreign patentee may obtain a patent. The foreign patentee, or the proprietor of the invention, though not the actual inventor, may legally obtain a patent. The *mere* importer, or introducer, is not entitled to a patent, though he may obtain one practically operative. The grantee or his registered assign may secure a certificate of additional improvements.

There is no provisional protection, the application being made complete. The invention is protected from the day of application, and no opposition can be made to the grant of the patent. No model or specimen is requisite. The patent is issued about two months after application. The patented invention may be freely imported, subject to the revenue laws. The patent laws are liberally interpreted by the courts in favor of the patentee. The patent is granted for twenty years, but does not continue after the expiration of all the prior foreign patents. There are no extensions. A tax is payable annually in advance—six months' grace with penalty. The invention must be worked within one year of its being worked in France, or, when no French patent has been obtained, within one year of its being commercially worked in any other foreign country.

Austrian Patents.

The empire includes Austria and Hungary, contains thirty-five millions inhabitants, and covers one hundred and thirty thousand square miles. The industrial interests of the country are making rapid progress, and few European states afford a more promising field for the introduction of new inventions.

The subject-matter of the Austrian and Hungarian patents must be a "discovery, invention, or improvement, having for its object a new product of industry," or "new means or mode of production," not worked or publicly known in the empire at the date of application.—Medicines, edibles, and beverages are not patentable, nor inventions opposed to sanitary laws, public regulations, interests, safety or morals.—An invention patented abroad may be patented at any time during the currency of the foreign patent.—A patent will not be granted for two distinct inventions—they must relate to the same object as "component parts or operative means." There is no investigation of the novelty or *general* utility of the invention, but the application will be rejected when the specification does not clearly explain and define the invention, or when it relates to any one of the prohibited subjects.—The officials now strictly enforce these conditions.

The patentee should be the inventor, his assignee or authorized agent—a native or foreigner. A *mere* importer is not entitled to a patent, but no proof of invention is required by the office, and patents of importation are generally operative.—The proprietor of an invention, though not the *formal* assignee, may obtain a valid patent in his own name or the name of an agent.

The application is made by filing a petition, duplicate specifications, and two sets of drawings. The specifications, in the German language, may be "open" or "secret." When "secret," they cannot be inspected by the public before the expiration of the patent. The local agent, to secure a patent in his name for the owner, requires no power, but to secure a patent in the name of a foreigner, he requires a legalized French or German power, and sometimes the foreign letters patent or a certified copy is demanded.

The duration of the Austrian and Hungarian patents is fifteen years, subject to the expiration of the prior foreign patent. When obtained for a shorter term, which is usual, they may be annually extended.—The Austrian and Hungarian patents are dated and expire the same day, and both must be presented at the ministry before the expiration of the term, calculated from the *issue* of the patents, to obtain a prolongation. The invention should be worked within one year of the date of issue, and the working should not cease for any two consecutive years,—the failure to work the invention renders the patent voidable. An extension of time for working is sometimes granted.

DEWEY & CO.,
U. S. and Foreign Patent Agents,
No. 414 Clay st., San Francisco.

Call Attention

To the special merits of your articles on exhibition by advertising them in the Mechanics' Fair Daily Press. The paper has a wide and extensive circulation amongst the most live people of the day, and you and your wares will become known to thousands that would otherwise know you not.

Costa Rica Mahogany can be had on very reasonable terms of Hobbs & Gilmore, Market street, near Beale. ***

To have a good look at the distinguished visitors from the East, and compare them with our own business men, use Muller's opera glasses and Brazilian pebble spectacles. ***

Returned.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. Howland.

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Ors. Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Newilz Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 3m

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores, Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.
THOMAS MOONEY, President.
August 2, 1869. 6v19-1m

New Advertisements.

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

Corner of Beale and Howard Streets,
SAN FRANCISCO.

Steam Engine Builders, Boiler Makers, Machinists, Foundrymen, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.

Directors:

S. F. Butterworth, Lloyd Tevis, James Pollock,
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John N. Risdon.

JOHN N. RISDON.....President.
JOSEPH MOORE.....Vice President and Superintendent.
LEWIS R. MEAD.....Secretary.
24v17-qy

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W. E. LOOMIS,
News Dealer
AND STATIONER,
Southeast corner Sansome and Washington streets,
SUPPLIES ALL
EASTERN PERIODICALS
By the Year, Month or Number

Woodworth Planers,

PLANERS AND MATCHERS,

With patent expansion, feed gear and other improvements, made at Worcester, Mass., in the most finished and substantial manner; also every description of Richardson, Merlam & Co's, Smith's and Wood's celebrated

Wood Working Machinery.

Embracing Mortising, Sash and Moulding, Smith's Stickers, Slat and Door Tenoning, Boring, Shaping, Scroll Sawing, Planing, Rod and Dowell making and Re-sawing Machines, Wood and Engine Lathes, etc., for sale at Eastern prices, at the Machinery Depot of

BERRY & PLACE,
112 and **114** California st., San Francisco.

☞ Agents for Blake's Patent Steam Pump, (warranted the best in the market); Davis & Furber's Woolen Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustrated Catalogues sent free.

Kustel's Treatise on Concentration of all kinds of Ores.

Including the Chlorination Process for Gold-bearing Sulphurets, Arseniurets, and Gold and Silver Ores generally. Illustrated with 120 Diagrams on 7 Plates.

CONTENTS:

I.—INTRODUCTION.

1. The Dressing.—Dressing of Ores; Principles of Dressing; Division of Dressing.

2. The Separation.—Separation of Gangue from Ore in the Mine; Dressing of Ores outside the Mine; Separation by Hammers; The Ragging; The Spalling; The Cobbing; Separation by Hand; The Picking.

3. Cleansing and Sizing Contrivances.—Washing and Sizing; Stationary Apparatus; The Sluice; The Kiln; The Step Sluice; Movable Machines; The Hand Riddle; The Roeker; The Circular Hand Riddle; Swinging and Jarring Riddles; The Jarring Riddle.

4. Rotary Sizers.—The Trommel or Drum; Cylindric Trommel; Prismatic Trommel; Conical Trommel; Combined Trommel; The Sifting Wheel; Sizes of Gruins for Jigging.

II.—REDUCTION.

1. Redaction of Ores.—Reduction of Ores to a Proper Size; Breaking nuder Heavy Stamps; Reduction by Rock Breakers; Hanscom's Crusher; Blake's Quartz Breaker; Reduction by Stamps.

2. Description of Batteries.—The Fonndation; Mortar Blocks; Frames; Iron Frames; Howland's Rotary Battery; The Straight Iron Battery; Bryant's Battery; Wright's Iron Battery.

3. Details of a Battery.—The Mortar; Stem or Lifter; Shoe or Pestle; Socket or Head; Tappet; California Tappet; Cams—Wooden Cams; Iron Cams.

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5. The Discbarge of Batteries.—The Discharge in Dry Crusbing—with Grates; without Grates; with Sieves; Dust Chambers; The Discharge in Wet Crushing—the Grates and Screens.

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7. Reduction by Rolling Mills.—Construction of Rollers; The Frame; Feeding of Rollers; Remarks.

8. Grinding.—The Arastra or Tebama; The Edge or Chili Mill; Ball Mills; Lundgren's Pulverizer: Cylinder Mills; Ferrand Mill; Hopkins' Grinder; Horizontal Mills; Iron Pan Grinders.

9. Paus with Plane Mullers.—The Common Pau Grinders; Tub Griuder; Bartolo's Grinder; Knox's Pan; Varney's Pan; Wheeler's Pan; Union Grinder; Moore's Quartz Grinder; Gaston's Grinder.

10. Pans with Conical Mullers—Hepburn & Peterson's Pun; Belden's Pan; Baux & Guiod's Grinder.

11. Pans with Tractory-Conical Mullers.—Excelsior Pan; Wheeler & Randall's Pan; Excelsior Continuous Grinders.

12. Pans with Perpeudicular Mullers.—Tbe Centrifngal Ore Grinder; Varney's Quartz Grinder.

III.—CONCENTRATION.

Concentration of Reduced Ore.—Division.

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2. Movable Jiggers.—The Movable Jigger.

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4. Coutinual Jiggers.—Percussion Jigger, Setz Herd); Continual Cylinder Jigger; Continual Jigger; Hydraulic Continual.

5. Rotary Machines.—The Rotating Cylinder (Strom-setz Maschine); Rotating Wheel (Setz-Rad); The Dolly Tub; Auferman's Dry Jigger.

B. Concentration of Ore Sands and Slimes.

6. Assorting of Sands.—The Labyrinth; Borlace's Slime Separator; Ph. Hofmann's Separator; Rittinger's Funnel or Pointed Box; Rittinger's Spitz-Lutte.

7. Feeding of Concentrator.—Feeding-Boxes; Stationary Feed-Box; Rotating Feeder.

8. Stationary Concentrators.—Hand Bnddle; Sleeping Table; Rack; Sweeping Tables; Round Buddle; Concave Buddle; Blanket Tables.

9. Percussion Tables.—Percussion Tables; German Percussion Table; Continual Percussion Table; Hunter's Continual Percussion Table; Varney's Pereussion Buddle.

10. Oscillating and Shaking Tables.—Borlace's Concentrator; Hendy's Concentrator; Hungerford's Coucentrator; Barron's Concentrator.

11. Steady Moving Concentrators.—Coneave Rotary Buddle; Convex Rotary Buddle; Burton's Table; Self-Discbarging Blankets; Horizontal-Moving Blanket.

IV.—SPECIAL CONCENTRATION.

1. Concentration of Gold Ores.—Concentration of Gold Ores; Amalgam of Gold Quartz; Amalgamation and Grinding; Combined Coneentration and Amalgamation; Treatment of Coucentrated Stuff.

2. Concentration of Silver Ores; Coneentration Works; Cost of Coucentration; Concentration of Tailings.

3. Coucentration of Lead and other Ores.—Coucentration of Lead, Copper and other Ores; Value of Ores for Concentration.

V.—CHLORINATION.

Extraction of Gold from Sulphurets or Arsencials by Chloriuation; Assay of Gold Sulphurets by Chlorination; Chlorination Process for Sulphurets; Loss of Gold in Roasting; Singlo Roasting Furnaces; Double Furnaces; Mechanical Furnaces; The Roasting Operation; Roasting with Salt.

Chlorination.—Damping of the Roasted Oro; Sifting; Production of Chlorine Gus; Lixiviation; The Precipitatiug Vat; The Precipitation; Cost of the Chlorinatiou Process per tou of Ore; Remarks.

Other Methods of Dissolving and Precitating the Gold from Sulphurets.—Chlorination at Reichenstein; Cblorination at Schemnitz; Calvert's Method for Auriferous Quartz; Extraction of Gold, Silver and Copper.

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The following Table shows the relative value of a Currency Dollar to Coin at rates of premium from 110 to 149:

110	90⅞	130	77
111	90	131	76⅜
112	89⅛	132	75⅞
113	88½	133	75⅛
114	87⅞	134	74⅝
115	87⅛	135	74
116	86½	136	73½
117	85½	137	73
118	84⅞	138	72½
119	84	139	72
120	83⅓	140	71⅜
121	82⅝	141	71
122	82	142	70⅜
123	81⅜	143	69⅞
124	80⅝	144	69½
125	80	145	69
126	79⅜	146	68⅝
127	78⅞	147	68
128	78⅛	148	67½
129	77½	149	67

Quarterly and Monthly Editions.

At the end of each quarter a large number of our weekly issues for the preceding three moatbs are bouad np in book form, which, by special arraagement, are placed upon the ferry boats and various steamers leaviag San Francisco and other ports on the Pacific Coast, for free reading by the intelligent traveling public. The Quarterlies are also to be found in the principal libraries, depots, hotels, and free reading rooms of the Coast.

This, in addition to our Monthly Scries and large weekly circulation, makes the PRESS the BEST and CHEAPEST general advertising medium throughout the Pacific Coast. The value of ndvertising in our columns, however, is best determined by those who have tried it, and we respectfully refer to our patroas in that line. No paper in the Uaited States ean boast a better class, and no weekly paper on the Paciffe Coast receives as large a sum for regular advertising, or bas more constant or long-continued customers.

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What they are;
How Assaved;
How Concentrated;
And How Worked;

With a Chapter on the

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New Mining Advertisements.

Siempre Viva Silver Mining Company, District of Zaragoza, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of September, 1869, an assessment of one dollar and fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 314 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOUISE, Secretary.

Office, 314 California street, Up stairs, San Francisco, California sc11

Mining Notices--Continued.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixth (6th) day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
E F Baldwin	2	260	$130 00

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of August, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on the twenty-third day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep11

Evening Star, No. 1, Silver Mining Company. Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of August, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the fifteenth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room No. 6, No. 302 Monigomery street, San Francisco, Cal. au28

Glenwood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 418 California street, San Francisco. jc12

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Wednesday, the sixth day of October, 1869, and the sale thereof until Tuesday, the twenty sixth day of October, 1869. By order of the Board of Trustees.

sep11 O. D. SQUIRE, Secretary.

Hamilton Hydraulic Tunnel and Mining Company, White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Chas. H Latson	no cert	800	$400 00
Edw Heathcote	no cert	800	400 00
Hiram Rosekrans	no cert	800	400 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of August, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, on the twenty-seventh day of September, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep11

Kincaid Flat Mining Company, Tuolumne County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the fourth (4th) day of August, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
— Colburn	77	10	$25 00
— Colburn	80	10	25 00
James Nelson	31	10	25 00
James Nelson	32	10	25 00
I P Rankin	33	10	25 00
I P Rankin	34	10	25 00
I P Rankin	65	5	12 50
Wm H Sharp	35	10	25 00
Wm H Sharp	36	10	25 00
E S Tibbey	29	10	25 00
E S Tibbey	30	10	25 00
F Vassault	55	10	25 00
F Vassault	56	10	25 00
F Vassault	57	10	25 00
F Vassault	58	10	25 00
F Vassault	59	10	25 00
John Walker	78	10	25 00
John Walker	79	10	25 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth (4th) day of August, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. S. L. Jones & Co., auctioneers, 207 and 209 California street, on Saturday, the twenty-fifth day of September, 1869, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. H. CROWE, Secretary.

Office, 220 Clay street, San Francisco, Cal. sc11

Scnator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of September, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 408 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. sc11

Silver Wave Mining Company.—Location of Works; White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of August, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869. By order of the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. sc4

Silver Sprout Mining Company.—Location of Works and Mines: Kearsarge District, Inyo county, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-seventh day of July, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Brown, B L	11	10	$5 00
Cleaveland, R H	7	10	5 00
Devin, J D	12	10	5 00
Gillis John	unissued	640	320 00
Hearst, George	unissued	200	100 00
Jackson, Otis	9	40	20 00
McLaughlin, J W	unissued	1000	500 00
McMillin, Jas	10	20	10 00
Mott, E B, Jr	unissued	200	100 00
Wingard, A	unissued	1060	530 00
Williams, Mrs. Mary	16	80	40 00

And in accordance with law, and an order of the Board of Trustees, made on the twenty-seventh day of July, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, California, on the twentieth day of September, 1869, at the hour of 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. sep4

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of August, A. D. 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 520 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURFEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. au28

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the tenth day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 439 California street, San Francisco, Cal.

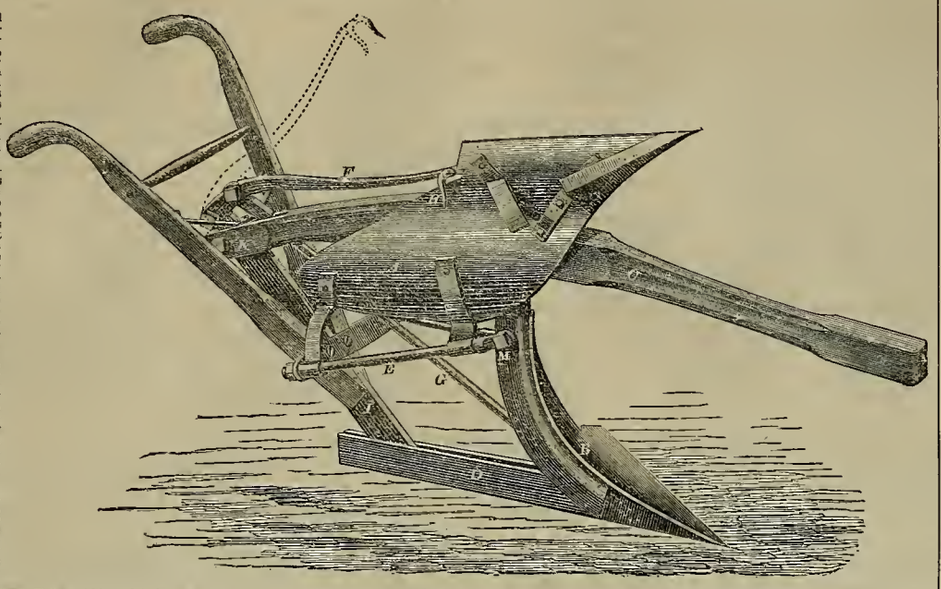
Any stock upon which said assessment shall remain unpaid on Friday, the seventeenth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the seventh day of October, 1869, to pay the delinquent assesment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. H RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. au14

WHERE TO ADVERTISE.—The attention of traders and mill machinists is called to the fact that the *Mountain Messenger*, of Downieville, Sierra County, possesses many special advantages as an advertising medium over a majority of the interior press, it being the only public journal published within a radius of sixty miles, in the richest and most populous mining sections of the State. Its weekly edition is double the average of country papers, being without the range of large dailies, and having no competition at home. Its local columns afford many items for our city cotemporaries, while its rates of advertising are reasonably low 10v17tf

SCOVILLE'S CLIMAX SIDE-HILL PLOW.



The advantages claimed for this new Patent California Plow over others employed for similar work, consist in its being so constructed that the plow which is not in use is thrown up in such a manner as to rest its weight upon the beam, as shown in the engraving, where the plow, A, is firmly held by the hooks upon the end of the iron arm, F. The weight of the upturned plow is thus made to aid in keeping the opposite plow to its work in the ground, while the balance of weight is so equally divided as not to give an excess on one side. Its position is also such that it does not in any way interfere with the plowing, and the person who holds the plow can see to handle it as readily as though the mold-board was not resting upon the beam. The handles are so arranged as to give to the holder a sure and easy control of the plow. The rod, G, is operated by the arm or lever, F, so as to lock the plow to be used in its proper position in the standard, by entering a slot in the toe of the land-side, D. When it is desirable to use a single plow (as on level ground) either of the mold-boards may be quickly removed by loosening the nut, M, and removing the rod, E, thus converting it into a single plow. The mold-boards are hung upon two angularly-placed axles, one of which belonging to the plow not in use is shown at E, with its mode of attachment to the axis. The plow may also be used double, as for ditching, etc., by slipping a cap over the joint of both plows when in proper position. The mold-board being made of the best of steel, and of a peculiar shape and great acuteness of sheer, will free itself or scour in all kinds of soil, and requires fully twenty per cent. less draft than any other plow of same size. It turns the soil so as to bury the stubble, and leaves the ground in a good condition for seeding. This Plow has been successfully introduced, the following parties, among others, already having them in use: J. J. Reed, Marin county; A. F. Scott, Centerville; George W. Shadd, Watsonville; James McCormick, Pescadero; and J. J. Wood, J. S. Gilchrist and J. B. Jones, of Spanishtown, San Mateo county, California.

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Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers. Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, height of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

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To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

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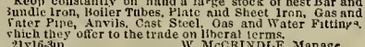

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Of a superior make. Sole manufacturer of the celebrated

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BANK VAULTS AND SAFES,

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MACHINE WORKS,

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Between Main and Spear,

New and second-hand

Engines and Boilers,

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Also one first-class Hoisting Engine; one Upright Engine, of entirely new pattern.

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Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

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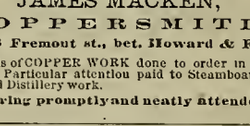

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A cheap and handy book for Quartz Prospectors, Millmen, and Amateur Assayers.

This little work, of 130 pages, although partly devoted to a discussion of limited interest to general readers, contains instructions in the WORKING AND ASSAYING OF ORES, AND TABLES FOR REFERENCE, which renders it quite desirable and of frequent service.

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PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has everrequired repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setters for themselves, at the office, **220** Fremont street,

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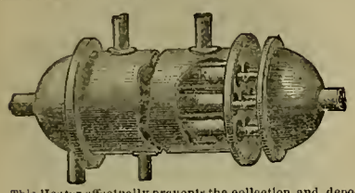

This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

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New Method of Packing Stationary Joints in Steam Engines,

— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from entering into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869 By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. F. LEE, Marysville, Cal. 6v19-3m

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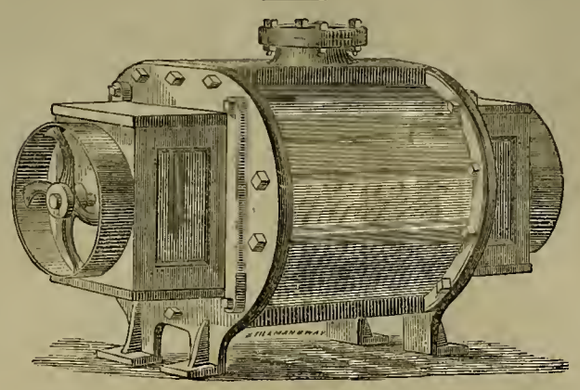
ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

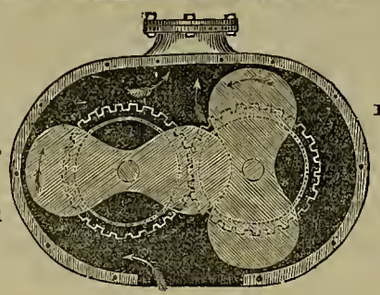
MANUFACTURED BY KEEP & BARGION,

At the Globe Iron Works, Stockton, California.



Awarded the First Premium at the Paris Exposition.

Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.



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REQUIRES **Fifty Per Cent.** LESS POWER **Than any Blower** Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

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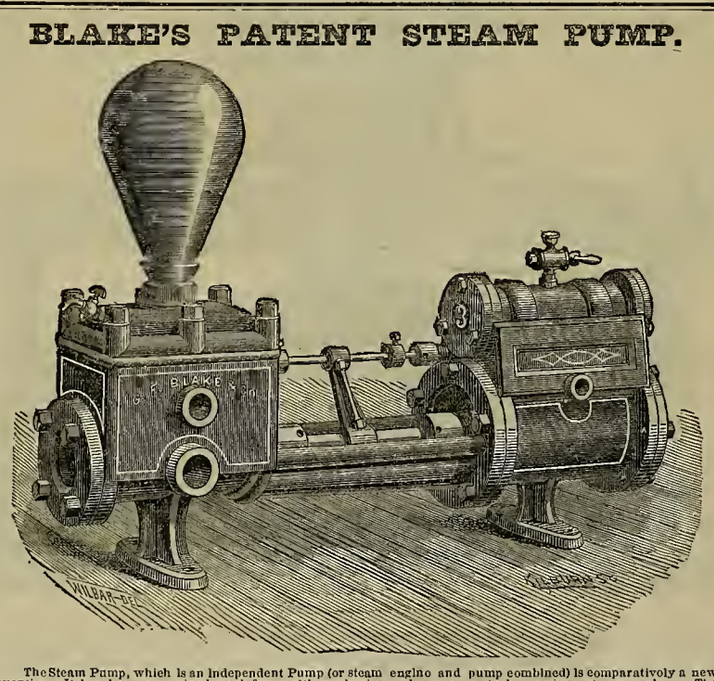
BLAKE'S PATENT STEAM PUMP.



The Steam Pump, which is an independent Pump (or steam engine and pump combined) is comparatively a new invention. It has, however, gained much favor with mechanics, and now seems to be coming into general use. The Pump, of which the accompanying engraving is a representation, is the invention of Mr. George F. Blake, of Boston. A poor description only can be given of it without a diagram of its interior mechanism. The water cylinder is shown in the left hand side of the cut, underneath the air chamber. This cylinder may be made either of brass or cast iron; but brass valve seats, and both hard rubber and brass valves are used. The water is taken in at the lower aperture, and there are openings on both sides, for convenience of suction and discharge pipes. It is a double-action pump, having double water valves, which are very simple. The water is drawn in and forced out from both sides of the piston head, which, with the strong and ample copper air-chamber directly over the valves, keeps up a constant and large flow when the pump is in operation. The steam cylinder in ordinary sizes is about double the size of the water cylinder. The small cylinder, directly over the steam cylinder, contains the steam valve, which is operated entirely by steam, having an auxiliary valve, which is opened by the arm shown on the piston rod, with each stroke, just sufficient to allow the steam to work the main valve quickly. This main valve is cylindrical, and by a patent device of Mr. Blake's is perfectly balanced, thereby overcoming all friction or pressure of steam, and allowing it to slide with the greatest facility, as the steam is admitted at either end of the valve cylinder. The construction of the valve and auxiliary valve is such that IT IS IMPOSSIBLE for the piston TO STOP "ON THE CENTER," which was a general fault with steam pumps prior to adopting the plan of driving the valve itself by steam.

This Pump took the first prize at the Maryland Institute in 1863; the gold medal of the Middlesex Mechanic Association of Massachusetts, the same year, and the gold medal of the Massachusetts Charitable Mechanics' Association; the New Hampshire Mechanics' Association, and the Iowa State Fair, in 1867.

It is positive under any pressure; may be run AS SLOW OR FAST AS MAY BE DESIRED; will discharge more water than others of same dimensions. The steam part being cast in one entire piece obviates the trouble of leaky joints. The steam valve is perfectly balanced, and it WILL START AT ANY POINT of the stroke, and discharge all the water of condensation. These Pumps are now very generally employed at the East as BOILER FEEDERS; in

SUGAR HOUSES, BREWERIES, TANNERIES, STEAMBOATS, Etc.,

And for MINING AND FIRE PURPOSES; twelve different sizes being now in the market, adapted to classes of work varying from a discharge of twenty to three thousand gallons per minute.

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SELLING AGENTS FOR PACIFIC STATES,

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One of these Pumps may be seen in Operation at the Pavilion.

Notice to Miners,

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M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

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8v19-1y Stove Store, No. 1 Clay street, below Davis.

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KUSTEL'S NEW WORK,
CONCENTRATION

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For Gold-Bearing Sulphurets, Arseniurets, and Gold and Silver Ores generally.

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B. M. HARTSHORNE,
13v12 **President.**

Mining Secretary.

THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.

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Room 37 New Merchants' Exchange, California street,
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The Chilean Agricultural Exhibition. The distribution of prizes awarded at the Agricultural Exhibition, took place on Sunday, July 14th, at the Capital. Further reports have not been received.

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Embracing ALL SIZES of

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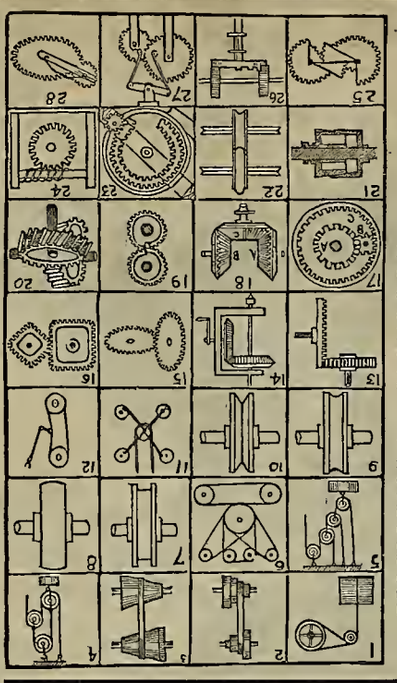

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The accompanying plate is from a series of Mechanical Movements illustrated and described and illustrated in our free circular, just issued, which contains a large amount of valuable information relating to Caveats, Patents, Patent Laws and Decisions, and the Rights and Privilcges of Inventors, Patentees and Assignees. Copies sent to any address on receipt of postage stamp.

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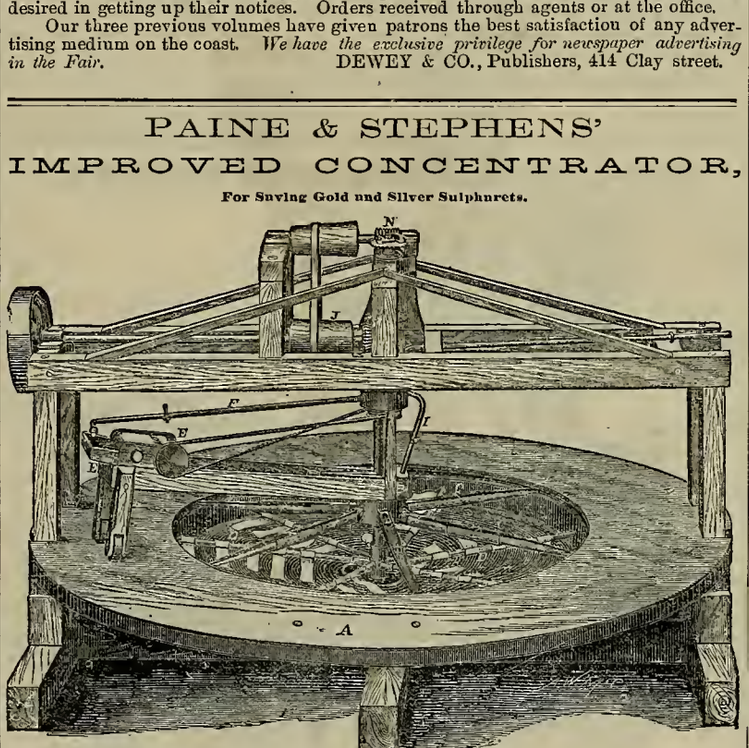
For Saving Gold and Silver Sulphurets.



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Less power being required than for any other Machine. The attention of quartz millmen throughout the State is directed to the subjoined certificates, and if they desire they can visit the Amador Mining Co's mill, near Sutter Creek, the Eureka Co's mill at Grass Valley, or the Banner Co's mill near Nevada, and see for themselves.

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This is to certify, that we have had in use for the past 18 months one of Paine, Stephens & Co's Sulphnret Saving Machines, constructed by John T. Harry, (called a buddle,) and which operates satisfactorily, particularly so in saving fine sulphurets, and we recommend it as well worthy of use, even where other Concentrators are used above it, as it will pay if there are any sulphurets.
WM. L. TISDALE, Supt. Star Spangled Banner Mine.

Nevada City, Oct. 26, 1868.

Any one wishing to purchase one of these nseful machines, can do so by applying to THOS. N. PAINE, at Grass Valley, Nevada County, or JOHN T. HARRY, Sutter Creek, Amador County.

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Melter and Refiner, U S, B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENEBERG & MOORE.

Messrs A. S. Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.
GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S Ha lidie & Co.—Gents.:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gaurier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, SEPTEMBER 25, 1869. VOLUME XIX. Number 13.

Imparting Knowledge.

The art of teaching by public lectures to adults, or to the yonthful graduates nf university or collegiate classes, is of several different varieties. On the general snbject of teaching, Professor Phillips, tho well-known geologist, who possesses a high reputation for skill in imparting instruction, has remarked "that success in teaching depends not merely, or mainly, on tbe personal ability of tho teacher, but much more on his standing in the *right direction to his audience*. For conversational, *i. e.*, tutorial teaching, *one* class of mind; for public teachiug of large audiences, *another* ie required. Again; a teacher, whether by conversation, or lectnre, ought to *lead by short stages*. You cannot explain the preceesion of the equinoxos to a man who does not know what the rotation of the earth means.

The propriety of adapting the calibre of a discourse was well illustrated by the younger Dugald Stowart. The senior Stewart was well known to be possessed of a much higher character of intellect than bis more popular son. Au intimate friend of the latter one day asked him how it was that though inferior in ecientific knowledge to his fatber, yet he (the son) afforded more gratification, and was listened to by more numerous audicnces? The reply nf the son was one well deserving remembrance. "The reason," said Dugald the yonnger, "is because I always take care to never allnw my discourses to be more tban *two days* ahead of the requirements of my audiences."

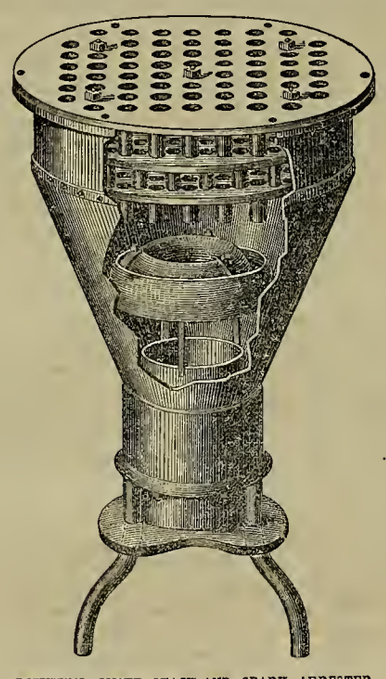
SOFT GOODS, COLORED FLANNELS, SILKS, etc., dyed scarlet and yellow, of late years has been found in many instances tn occasion inflammatory eruptions when worn next to the skin. Silk etnckings dyed a beantiful orange color have been found particularly deleterious in this respect; the dyeing agents in the latter named case being "picric acid," which is a derivative of phenol, or carbolic acid. Nitrogen is indispensible in the formation of picric acid, the compound being similar in physical properties to nitro-glycerine; it ie, however, explosive at lower temperature and percussion force than the latter named snbstance.

STOCKTON FAIR.—Tho San Joaquin Stock and Agricultural Implement Association will hold an exhibition, opening on September 25th and continuing until October 1st. During the exbibition addresses will be delivered suitahlo to the occasion; while rooms will be open overy eveuing for discussion on the products of the soil. Everything will be done hy tbe Managers to render the exhibition pleasant and profitahle to visitors.

HUNTINGTON'S IMPROVED SHINGLE MACHINE.—During the past season Mr. Huntington has furnished mills for Davis & Son, Carson; F. P. Brougham, White Pine; Jones & Co., Boca Station, Nevada; three to Truckee, and others in varioue quarters. Mr. H. bolds the right, on this coast, for Evart's patent.

Bowker's Smoke Stack and Spark Arrester.

We give herewith an illustration of Mr. John W. Bowker's improved Smoke Stack and Spark Arrester, a model of which is exhibited in the Pavilion, near the center of the machinery department. The object of this inventiou is to provide a device which shall serve to arrest the sparks which are usually forced out from the stacks of locomotive and other boilers, when the exhaust steam from the cylinders is discharged into the stack for tbe purpose of creating additional draft. This is accomplished, as shown in the engraving, by placing in tbe upper portion of the stack a seriee of perforated plates—three in number being fouud sufficient—eacb perforation being provided with a ebort tuhe, projecting downwards, and the tubee in each plate breaking joints with the one above or below. There is a small space between the bottom of each tuhe and the upper surface of the next plate below, and also betweon the outer edges nf the two lower plates and the inner wall of the smoke stack.



BOWKER'S SMOKE STACK AND SPARK ARRESTER.

When the engine or locomotive is in motion, tbe smoke, sparks and steam find their way into the upper portion of the stack throngb the upright inner tuhe, shown in the lower portion of the engraving, and pass up througb the central opening in the V-shaped circular trough seen above it; and wbile the smoke, gases and steam find tbeir way out into the atmosphero tbrougb tbe tubes, the sparks are arrested aud, with a small portion of condensed steam, fall back into the V-shaped trougb already noticed—the rush of steam through the center opening preveuting them from returning hack from whence they came. The bottom of the V shaped trough being open, allows the' sparks to fall in sucb a manner as to fiud their way between the outer wall of the discharge pipe, upon which the trough rests, and tbe inner wall of the stack; from thence they are conducted tbrough the curved tubes upon either side into the emoke box below, where tbey are mostly consumed by the intensity of the heat and draft.

By this arrangement the sparks from a locomotive are entirely arrested and oxtinguished, while the draft will not be in the least impaired. Numerous experiments bave been made with this spark arrester, and we are informed that not a spark can be seen issuing from tbe stack even on the darkest night. Railroad engineers who have used it inform us that, notwithstanding the fact of its arresting the egress of eparks, tbe self-discharging apparatus, in connection with the curved tubes already alluded to, is so effectual in its operations that less labor is required to keep it clean than in any of the ordinary contrivancee in use. We see no reason wby these spark arresters sbould not be placed on every railroad both here and at the East. If what is said of it is true, it must he an absolute preventive against tbe communication, by locomotive sparks, of fire to houses, timber, grain or grass—all of which suffer more or less from this cause, and often to tbe great cost of railroad companies.

A patent bas been recently allowed to Mr. Bowker through tbe MINING AND SCIENTIFIC PRESS PATENT AGENCY.

These spark catchers are in use on tbe California Pacific, Central Pacific, and the San Jose Railroads. The inventor, who is a practical mechanic and engineer, refers to Mr. Perkins, superintendent of the rolling stock and motive power of the Central Pacific; Mr. Masterman, master mechanic of tbe California Pacific Railroad, Vallejo; and to tbe proprietors of the Union Iron Works, San Francisco. Mr. Bowker may he addressed, care of H. J. Booth & Co., San Francisco.

Our Second Great Railroad.

Mr. Crocker bas resigned the superintentency of the Central Pacific to an old railroader, Mr. A. N. Towne, witb a view, it ie supposed, to devoting his own energies to a speedy completion of the California and Oregon road; assuming officially, for the preseut, the place of second Vice-President of the Company.

Those who were cognizant of the beginnings of the Central Pacific Railroad, in 1862-3-4, attribute to Charles Crocker's enthusiasm, as an influence exerted upon his fellow workers, an element of power directly bearing upon the carrying out of the scheme the importance of which, in pushing the enterprise to a head, was everything. Without such enthusiasm on the part of somebody, a fine idea or plan or theory, does not become a fact. It is a fine thing to plan; hut it is a better and nobler thing to execute. Thinkers are honored and appreciated by the intelligent; but doers are transformed into heroes by the world, and are honored, known and appreciated by everybody. Whose plan or idea the successful one may have beeu, does not matter much; the man who is happily born with "the enthusiasm to execute," deserves, and always gets, the credit.

A thousand Chinamen, says the Yreka *Journal*, are at present employed on the California and Oregou road. Thus we have good reasou for expecting to be able to travel to Oregon, if not to Puget Sound, by rail very shortly; and if Charles Crocker will put it througb for us as he bas done tho Central Pacific, the Pacific coast will remember him.

LANE & FULLER MINE, AUSTIN.—The annual report of this mine, for a copy of which we are indebted to the superintendent, Mr. C. C. Lane, shows that during the fiscal year ending July 1, 1869, the mine bas produced 1,029 558-2000ths tons of ore, which mill returne gave $224,050 38, averaging $217 68 per ton. The main shaft has been sunk to the depth of 445 feet, and levels run of 3,282 lineal feet. An additional engine of 30-horse power has been placed at the mine for pump, and a Cornish pump of 4-foot stroke and 6-inch bore has also been placed in the mine; a fire engine and a steam saw have been placed at the works. Total receipts, $251,554 56; expenditures, $212,833 08.

ANOTHER BRICK MACHINE.—Mr. Rider has placed another rather interesting brick machine, of 35,000 to 45,000 capacity per diem, into the Fair, not far from the large engine, which will be fouud at work making bricks to-morrow evening. It is Mr. Wrightington's, a new Boston patent, and works well.

Communications.

Co-operation.

BY DR. J. S. SILVER.

There is among the merchant class a manifest unfriendliness to coöperative industry. Merchants live and grow rich hy the poverty of manufacturers, and it is their supposed interest to keep down the makers' prices. Master manufacturers feel the same interest in keeping their workmen down. The more wokmen can be held from rising, the longer and the more the master can make out of them. When prices of goods advance, he thinks he ought to have all the advance. Is he not the master?

All this is natural and lawful. It is not in complaint of injustice that we speak of it. But if the manufacturer could make greater profit by coöperating with his workmen—by sharing with them the profits of their toil—be would willingly change his system. We propose to show that where master and men work together as co-partners, it is not alone to the greater profit of the men who work, but it is more profitahle also to tbe man who puts in his capital, in combination with their skill and lahor.

It is not an essay of speculative tbeories we would present, but the history of a long establisbed factory, now in full success, that affords actual proof (which will be as interesting to masters as to their workmen) that coöperation pays capital better than tbe principle of autagonism whicb the present system keeps alive; driving men to combine their forces till they finally emancipate themselves from its unfairness and its oppression. Overwhelming numhers, well marshaled, are sure to carry their point at last. We believe, however, that capital requires ouly such conviction as the followiug authentic example, to induce it to adopt freely and gladly a system which alone can reconcile all interests and be alike profitahle to all concerned.

Co-operative Iron Foundry.

At Guise, 90 miles northeast of Paris, is Lemaire's great foundry. Twenty years ago Lemaire, a disciple of Fourier, considered the idea of elevating the condition of his numerous working people. Though moved, in the first place, solely by moral cousiderations and religious convictions, his resolntion was not taken without thinking of its effects on bis business. From whatever point of view he regarded it, it seemed to him tbat, while conferring great benefits on his people, his own material interest would be advaneed in full proportion, and the sequel prnved the correctness of bis foresight. His first movemeut was to invest a million of francs, as a loan to his workmen, in the erection of a grand structure in which every family could have improved living rooms, with kitchen, garden, public hath and other comforts. A lecture room, library, and a theater, with regular free lectures, plays and concerts, and grouuds, with conveniences for picnics and field sports, formed an iudispensable part of his plan. He made all his men shareholders, and gave them to understand that they were not tenants, hut freeholders. By a system of small monthly payments, very easy to them, the whole cost of the property, now quadrupled in value, was liquidated, and now the whole is tbeir own, aud under their own management.

Soon after, he made a stock company of his great iron works; and he made all his men ehareholders by lending them capital on interest. He said, "you are not my hired lahorers, you are my associates, you have a voice in the affairs. When ynu save the scraps and improve the style and quality of work, it is for your own interest. My family and myself represent the capital, and we take the hurden of managcment and of sales and collections. Thus we earn our half, and you equally earn yours."

Now, oue-half of the establishment, with its great expansion since in the works and the value of the estate, is owned clear and entire by tbe workmeu.

In viewing this estahlishment, one is etruck with the peculiar neatness and intelligence of the workmen. In whatever department of the great iron works, ynu find every man you address, receives and answers you as if he were tho proprietor. He tries to convince you that it is your interest to give your nrders to "nur shops;" and he is ready with figures as to the cost, and with cousummate politeness he escorts you to the next department you desire to visit. In no case does any workman fail to make frequent mention of Monsieur Lemaire as the hest of men.

This wise and good man lives to see his henevolent plans realized. He is a father in the midst of a multitude of cbildren, who reverence and almost worship him. Ten thousand prayers go np daily to the throne of the Most High, invoking blessings on his head, and pleading before the Majesty of Heaven that his sainted soul may have a home in Paradise, hlessed and happy as tbat he has given to them on earth.

While we are hlindly engrossed with self-aggrandizement, piling dollar upon dollar, and selfishly counting ingots that give us much weight of care and small peace of mind, and to our fellow men nothing but stiut and hard exaction, let us give a moment's contemplation to this history of the good Lemaire. Is it profitable to follow his example, which, while it not impoverishes us, ennobles thousands and makes them happy, and secures us a final bome among the sprits of the great and good, the benefactors of mankind? Blessed are good on earth, for they shall he remembered in heaven.

Montana Notes.

[Written for the Mining and Scientific Press.]

Editors Press:—The town of Deer Lodge, from which we write, is the most unlike a mining camp of any in the mountains, and yet it is the most important place in Western Montana, and the supply point for an extensive area of gold-bearing country. Besides heing the county seat of Deer Lodge county, it is, among other things, celebrated as one of the oldest towns in the Territory, and as the site of the most unretentive jail in America—an institution that was never known to hold a prisoner long enough to hring him to justice. Withiu a few miles of this place gold was first discovered in Montaua Territory, seveu years ago, and "Gold Digger Tom" set up the first string of sluices near here, shortly after. Deer Lodge is surrounded by a large and fertile valley, the best stock range in this portion of the continent, and highly productive. Cattle and horses can here afford to work for nothing and "gruh" themselves, hesides rearing large and "ilegant" families for the benefit of humanity and the pockets of their owners. Talk about Texas for stock raising! It is nowhere beside tbis portion of Montaua; and our grass-fed beef, which annually adorns our Christmas stalls, will compare favorably with any to bo found in the United States, or any other couutry.

But tbis is not mining news. We are awaro of it. In fact, water is so confounded scarce that there are but few items afloat from wbich is to construct anytbing in that line. Streams which are usually from fifteen to twenty feet wide and two or three feet deep, now present dry and dusty beds, in whicb it would he necessary to prosecute considerahle well-digging before striking water, and the wholo country is as dry as A. Ward's hest joke; but it isn't a joke. Long ditches are an aggravation; expensive flumes are warping mockeries, and those who own the most "ground" are, for tbe time being, the poorest. Under sucb circumstances we are surprised that there are not more "dead hroke" and "flat on bedrock." We are surprised that Montana, under the discouragement of the dullest seasnn she ever saw, wears such a cheerful aspect and gives such good promise for the future.

Our new Governor, the Hon. James M. Ashley, formerly of Ohio, made a speech here last night, in the course of which be asserted that he was cnuvinced, after a careful collectiou of data, that Mnntaua had sufficient placer mining ground to keep employed two hundred thousand men fnr ten years. This scems a startling statement, when it is considered that the popu-latiou of the Territory never exceeded thirty thousand; hut it is doubtless true, or at least will be whenever labor hecomes as cbeap here as in California. As a means of secnring this cheap lahor, Gov. Ashley strongly recommends that steps he taken to induce an immigration of the agricultnral classes.

The agricultural resources of our Territory have heen greatly under-estimated. It has beeu difficult for the people of the States to conceive of a country in the Rocky Mountains in which stock can live tbe winter through, like garhage-gatherers, on what they can pick up, and where the season is sufficiently lnng for the raising of luxurious grain crops that would do credit to the most favored portions of the Union. The talk of isothermal lines is looked upon as a roping-in operation, a "bait for suckers;" and those who bave obtained their knowledge of the Rocky Mountains from Fremont's accounts are slow to credit tbe reports of to-day, well authenticated though they be. The great duty before us, as well as before you of Califoruia, now is to educate the people, not only of the States but of Europe. "Capital—give us capital." Fnr this every mining community lougs, and, failing to receive, makes it the burden of its vain regrets. With it, extensive ditches and flumes could he constructed, rivers turned, quartz mines developed, and a reign of general prosperity inaugurated. Too little thonght is, however, hestowed upon the fact that tbese same results may be ohtained by means of cbeap labor; and that lahor will hecome cheap just in proportion as the price of the necessaries of life is reduced. Hence one of the most sure, although indirect, methods of developing the mineral resources of a country is to foster agricultural pursuits, especially where, as in Montana, the conditions are favorable. Governor Ashley is now making a tour of the Territory, for the purpose of gathering facts and statistics to he laid before the people of the East and Europe, with the especial purpose of inducing an agricultural immigration.

Everywhere.

Deer Lodge, Montaua, Sept. 7, 1869.

Phillips' Portable Assaying Apparatus.

This is an arrangement for using the blowpipe on large assays of twenty grams, or furnace size, that is, twenty times the weight of the usual hlowpipe assay. Four blowpipe flames are made to uuite upon the assay; and tho heat is further concentrated or preserved at the point where it is required, hy a device original with Mr. Phillips, which we deem of value in the use of the blowpipe, viz: the application of a piece of coal above the assay, as a reflector and anti-radiator. Great ingenuity is displayed by Mr. Phillips in many ways—for the purpose of holding the assay automatically, to adapt it to the use of unskillod persons, to weigh and obtain the results at sight, to secure portability, etc.

The lungs, Mr. Phillips found, were easily capable of furnishing hlast for four blowpipes. He has here, however, removed the strain of continuous blowing, necessary in the ordinary blowpipe, by employing the priuciple of the water blowpipe whereby a column of water is blown up in a vertical cylinder, and tbe operator, who may be quite unskilled, can thereupon rest for a minute while tbe water does the blowing, before he repeats the operation.

Tbe fluxes aud all other necessary assaying articles are made to fit into the compact lahoratory, which is to be seen on tbe counter of Dewey & Co., and which weigbs six pounds, and is sold by Mr. Phillips for $100. The invention is specially intended for prospectors and travelers. Further particulars concerning its use can be obtained at Mr. Phillips' assaying and instruction rooms, No. 423 Washington street.

A Little Errand for Nothing.—Professor Hall and Rogers, of the U. S. Naval Observatory, at Washington, have just returned from the Siherian Coast, per U. S. S. Mohican, which was specially deputed by the Navy Department to carry them to the spot for the purpose of observing the eclipse ou the 7th of August. The superh iustruments were placed on favorable summits, and the professors waited, hut half an hour before the eclipse was to take place a cloudlet came, and eclipsed *it*—so that a journey half-way round the world was made for nothing.

The Pullman Palace Car.

[From the Mechanics' Fair Daily Press, Sept. 22.]

The Pullman palace dining and sleeping car—the first railroad car which has passed direct from New York into San Francisco—was placed on exhihition to-day, in a building especially prepared for its reception, on the soutb side of the Pavilion. A number of ladies and gentlemen, including memhers of the press, were invited to inspect it last evening, on which occasion a bountiful lunch was spread hy Mr. Gray, the gentlemanly agent of tbe Pullman Car Company. The car was carefully examined, and ample justice done to the good things liherally provided for the appetites of the visitors. Toasts were drank, speeches made, and the merits and comforts of this traveling palace freely discussed and admitted. Governor Low and lady, Captain Eldridge and others, were among the invited guests.

The ox car of '49 and the palace car of '69 are most suggestive of the rapid advances which have heen made in the comforts and conveniences of traveling during the last twenty years. Can it be that in so sbort a time, or, to go hack a little further, can it he that within the last *forty* years we have passed from the old time-honored slow coach mode of travel to the very climax of speed, comfort and convenience in locomotion? If not, what is to come next? What is to supersede the splendid floating and railroad palaces of to-day? How and where is the coming generation to improvo upon the present?

The car now ou exhihition is said to he the most complete and elaborately finished of any which the Pullman Company have yet constructed. It was built at Dayton, Ohio, at a cost of about $28,000, and has been secured for exhihition here through the efforts of Mr. W. F. Herrick, one of the managers of the Institute, who went East last summer to interest our Mississippi and Atlantic friends in the present Exhihition. The car is fifty-seven fect in length hy ten feet four inches in width. The inside finisb is of highly polished hlack walnut. It contains sleeping apartments, drawing-rooms, restaurant conveniences, pantry, etc. An elegant parlor organ is also added for the enjoyment of travelers. No description of its finish or of the general arrangement of the car can do it justice. To be appreciated it must be seen.

The Art Gallery cnntains several works of much merit. We are pleased with Mr. S. Walker's sunset effects, because he has reproduced many of the silent beauties of the "witching bour." John Wilson's two sea pictures evince tbe handling of a first-class artist. His great storm waves are nature itself—and we are there, in the midst of the scene, as long as we look at bis canvas. A good painting or engraving captivates the imagination, and it speaks constantly, to everybody and for all time while the light shines. The refining influence is unmistakable; exerted unceasiugly, as is the case where one's own choice selections adorn tbe chamber, tbey are an agency more powerful in shaping personal character than any other moral influence. A picture should be selected or appreciated for the sentiment nr idea it conveys.

Ores of the Base Metal Range, White Pine.—The "base metal" ores may be classed as oxidized and sulphureted lead ores, oxidized and sulphureted copper ores, quartzose sulphureted, and calcareous chloride silver ores. The first contain from 20 to 65 per cent. of lead, and yield hy fire assay from $40 to $120 of silver per ton; the second, from 12 to 25 per cent. of copper, and from $40 to $250 of silver per ton. The sulphureted aro richer than the oxidizcd ores, and it is probable that the latter will he replaced by the former, as the ledges are wnrked to greater depths.—*Writer in Sept. Overland Monthly.*

A New Name for a Familiar Subject. A Kentucky paper calls divorces, "severancer of conjugality."

Mechanical Progress.

The Chronoscope.

This is Capt. Noble's instrument for determining the velocity of projectiles in various parts of the bore of a gun; and was exhibited at the late meeting of the Institution of Mechanical Engineers in Newcastle. It consists,—says *Engineering*,—of half a dozen disks placed on an axle, these disks being put in motion by means of a heavy weight, and their relative velocity being regulated by a train of toothed wheels. An uniform and very rapid rotation was thus imparted to the disks; each of which bore a certain ratio to the one preceding it. Knowing the speed of one, therefore, they would readily calculate the rate of revolution of the most rapidly revolving disk; and by a special clock-work arrangement the precise speed to hundredths of a second could be indicated at any moment. The weight was so arranged that any required speed could be obtained. If it were exactly 1,000 in. per second, an inch of rotation at the circumference of the wheel would represent the thousandth part of a second; and so by an arrangement attached to the instrument, they were able to read to the thousandth part of a second; the time actually capable of being measured, so far as the rotation of the wheel was concerned, was the millionth part of a second. Captain Noble showed the mode of registration, which was effected by means of an induction coil. In measuring the velocity of a projectile, the primary wire of the coil was attached to any point of the barrel of the gun, or a set of wires might be so attached at intervals along the barrel, and at the instant of the passing of the shot, the wire or wires would be cut by the projectile, and an impression would be left upon the disk, which was covered with prepared paper for receiving the spark. Each of the disks might be attached to some portion of the gun barrel by a separate coil, and the precise moment of time at which the shot passed the identical spot would be most accurately recorded upon the disk.

CHECK UPON CAB-DRIVERS.—An ingenious French inventor has contrived an arrangement which will do away with all differences of opinion between cab-drivers and their passengers. Two dials are so placed in the cab as to be beyond the control of either party. One indicates the distance traveled, by means of a tell-tale hand moved by the revolution of the wheel; the other belongs to a clock which keeps that hand moving as soon as the wheel stops, so that the time spent in stopping and making calls is duly registered at so much per hour. The whole is thrown out of gear by raising a lever when the cab is disengaged. It being for the driver's interest to have as much paid for as possible,—since he gets a percentage of the receipts,—he will of course put down the lever as soon as he is hired; he must account to the cab-owner to the amount called for by a card in the interior of the machine, so he will not drive around without a passenger. Of course he can demand of the passenger no more money than the tell-tale calls for.

THE FIRST CIRCULAR SAW.—Lemuel Read, of North Brookfield, N. Y., sends the *Scientific American* the remains of the first circular saw in America. It was made by him in 1813, for splitting bass-wood boards for old-fashioned wheel-rims. It was of sheet-iron, and was run at a speed of 2,000 revolutions per minute. It worked admirably.

ALLOYS FUSIBLE AT LOW TEMPERATURES. While engaged in galvanoplastic experiments, M. Lalance used seven to five parts of bismuth to one to five parts of cadmium. The alloy which he thus obtained, fused at the low temperature of 66°. The most surprising feature in this discovery is that its difference from the other alloys consists in the addition of a metal of more difficult fusibility than any of those contained in the ordinary alloy. The cadmium by itself only melts at a temperature of 360° C. The other components, lead, bismuth, and tin, fuse at 312°, 276°, and 230° respectively. Another point worthy of note in the preparation of alloys is the peculiar use made of bismuth. The alloys of Newton, D'Arcet, Pelouze, and Wood, consist, to the extent of exactly one-half of their weight, of bismuth.

The next discovery in this field ought to be an alloy fusible at the ordinary temperature.—*Sci. American.*

OVERHEATING OF BOILER PLATES.—Mr. L. E. Fletcher, of the Manchester Steam Users' Association, says overheating often occurs simply from the character of the feed-water. That impregnated with carbonate of lime is worst. It forms but little scale, but deposits a fine loose flour, the amount of which is often overlooked, because it is so easily floated away when the boiler is cleaned. If grease be introduced into boilers in which this deposit is formed, the furnace crowns are found to give way, the plates to bulge downwards, and leakage to take place at the seams. The crowns come down gradually, little by little day after day. The grease is introduced into the feed water by blowing the exhaust steam upon it; and in the same way the floury deposit is made to constantly accumulate in the boilers. The manner in which the effect upon the plates is produced may be as follows: "This fine floury deposit, by thickening the water, interferes with the due escape of the globules of steam, so that they are kept longer in contact with the plates over the fire than they should be, and thus the intimate contact of the water with the plates become interrupted, and overheating is produced."

IMPROVEMENTS IN HEAVY TOOLS FOR IRON WORK.—In a late sketch of the Pittsburg Steam Hammer Works, the *Commercial* has the following:

"The company possesses the only traveling-head planer to be found in the country. The work to be planed is made fast to a massive iron table attached to the machine, and the tool travels over the work at remarkable speed. It is capable of planing the largest stand for steam hammers hitherto made in this country, and also planes the top and bottom of the stand with the same ease and mode of attachment—a feat not accomplished on ordinary planers. The traveling-head planer requires but half the shop-room demanded by the ordinary planer, which carries the job of work, and requires twice the length of itself. Another special tool is the radial drill press. This tool is capable of boring any number of holes in massive pieces of machinery in a radius of say forty inches, without moving the piece of work during the process; the machine itself being constructed in such a manner as to almost warrant the title of a universal boring machine, having extraordinary driving power, and an improved movable table connected with it, which enables the machine, in all its changes, to be controlled by a single workman unaided. Thus the changes in the work are made in half the time formerly consumed, besides obviating the liability to derangement."

PYROMETER FOR HIGH TEMPERATURES.—M. Lamy has devised an instrument which shows within two or three degrees Centigrade the temperature of a furnace heated to redness, and gives its indication at a distance from the furnace, so that at a porcelain factory, for example, a manager can sit in his office and see the temperature of all the furnaces in his establishment. It is merely an iron retort, containing marble. The neck communicates, by means of a tube, with a needle moving over a dial plate. As the heat rises, the marble is decomposed, and carbonic acid set at liberty. A special contrivance measures the tension the gas arrives at, and as this has a direct relation to the temperature, the measure of the one is made the measure of the other.

ANOTHER GALVANIC PROTECTION FOR IRON VESSELS.—A method of protecting iron vessels against rust and corrosion has been proposed by MM. Dance and Bertin. They contemplate the conversion of the hull of the iron vessel into a galvanic battery, by placing, inside the hull, pipes and tanks made of zinc and filled with sea water, and connected by means of bolts and rivets in metallic contact with the outer side of the vessel. They also design to use strips of zinc on the iron plates of the vessel immersed in the water.

LOCK FOR NUTS AND BOLTS.—A Connecticut man has invented a simple but effectual method to prevent nuts and bolts from working loose by unscrewing. It consists in the application of a left hand screw, fitted into the end of the bolt, so that its end will partly cover the end of the nut.

Scientific Progress.

Prof. Hendricks on the Beginning of Worlds.

The following is part of an article by Prof. Hendricks, in the Boston *Journal of Chemistry*: "I have assumed it as admitted that the ether is everywhere present throughout unlimited space. The *nebular hypothesis*, which in its main features receives additional support from every new discovery in astronomical science, assumes that the solar system, and by analogy every other system of the universe, once existed in an ethereal or nebulous condition, occupying at least all the space included within the orbit of the remotest planet, and that, from *some* cause, which is called *gravity*, its parts have been isolated and consolidated into their present condition. Now this hypothesis, of which I count myself a believer, has failed to account for the commencement of the consolidation. I have suggested that possibly the ultimate state of a nebula, before its condensation commences, is that of the ether itself. And, as in that case we have no gravity to effect the condensation, I have tried to show that condensation, when once initiated, would result from the vibrations of the ether itself. I confess I have not obviated the difficulty of accounting for the initiation of the phenomena, but I claim that my view of the case presents a conceivable method of dispensing with gravity as a property of matter, which, to my mind, improves the nebular hypothesis.

We have no knowledge of, nor can we conceive as possible, matter in a state of absolute rest. I assume, then, not only that matter always *was*, but that it always was in *motion*, and that every form of force is simply the manifestation of a transfer of motion from one portion of matter to another. If all the motions of the universe were consonant, as would be the case if the universe were homogeneous, the motion could by no means be recognized. Heterogeneity is therefore essential to a recognizable world. The simplest conception that I can form of a recognizable world is, therefore, an infinitely extended ether, in motion, having nucleated centers."

A NEW THERMO-ELECTRIC BATTERY.—A battery which was exhibited at a recent meeting of the French Academy, is composed of small bars of galena and of thin sheet-iron, so arranged in the form of a hollow cylinder that the heat of a gas burner introduced within may be applied to one end of all the bars. M. Becquerel read a paper on the subject, in which he expressed the opinion that such batteries, constructed either of metallic alloys or as in the specimens exhibited, of a metallic sulphide and a metal, are not economical in use; besides, they are extremely liable to detrimental change from heat.

PRIZES FOR THE DISCOVERY OF COMETS. The Imperial Academy of Sciences at Vienna has issued a circular in which, after stating that notwithstanding the wide distribution of telescopes during past years, the discoveries of new comets have been remarkably few, it proceeds to offer prizes for such discoveries during the next three years, from May 31, 1869, to May 31, 1872. There will be eight prizes yearly, consisting of a gold medal worth twenty ducats, or its value in money, as the receiver may choose. The conditions to be complied with, upon which the awards will be made, are given in the *American Journal of Science and Arts.*

DIATOMS AND THE SPECTROSCOPE.—H. L. Smith has found additional proof of the vegetable nature of the Diatomaceæ in the fact that the spectrum of *diatomin* is identical with that of *chlorophyl*, the coloring matter of plants. We give a few paragraphs from his article in *Silliman's Journal*: "The vegetable nature of the Diatomaceæ is now generally admitted, but if any further proof is needed we have it in marked results from the application of the spectroscope. I have been enabled to prove the absolute identity of *chlorophyl* or the green endochrome of plants with *diatomin* or the olive yellow endochrome of the Diatomaceæ. A very black, narrow band in the extreme red, reading at the lower edge, which appears to be constant, about ⅞ of Mr. Sorby's scale, is too characteristic to be mistaken. There are two other very faint bands, not easily seen, and somewhat more variable in position. The black band in the red is always present, and is remarkably constant in the position of its lower edge."

A New Test of Death.

M. de Parville has devised an arrangement by which an infallible answer to the question whether the subject examined is or is not dead, may be obtained. It is well known that atropiee—the active principle of belladonna—possesses the property of considerably dilating the pupil of the eye. Oculists constantly make use of it, when they want to perform an operation, or to examine the interior of the eye. Now M. le Docteur Boncbut has shown that atropine has no action on the pupil when death is real. In a state of lethargy, the pupil, under the influence of a few drops of atropine dilates in the course of a few minutes; the dilation also takes place a few instants after death; but it ceases in half an hour at the longest; consequently, the enlargement of the pupil is a certain sign that death is only apparent.

"This premised, imagine a little camera-obscura, scarcely so big as an opera-glass, containing a slip of photographic paper, which is kept unrolling for five-and-twenty or thirty minutes by means of clock-work. This apparatus, placed a short distance in front of a dead person's eye, will depict on the paper the pupil of the eye, which will have been previously moistened with a few drops of atropine. It is evident that, as the paper slides before the eye of the corpse, if the pupil dilate, its photographic image will be dilated; if, on the contrary, it remains unchanged, the image will retain its original size. An inspection of the paper then enables the experimenter to read upon it whether the death is real or apparent only. This sort of declaration can be handed to the civil officer, who will give a permit to bury, in return."

AM. ASSOC. FOR THE ADVANCEMENT OF SCIENCE.—The Salem meeting was well attended from all parts of the country. About 250 old members were present; 150 new ones were made. A list of some 150 communications is given in the *American Journal of Science and Arts*, the titles of which appeared in the daily official programmes. Some of these were read only by title at the meeting. The names of the authors are given; among them are Silliman, Wurtz, Van der Weyde, Blake, Seely, Hinrichs, Farmer, Horsford, Hunt, Newberry, Marsh, and others.

RESULTS OF THE ECLIPSE OBSERVATIONS. The *American Journal of Science and Arts* says: "There can be no doubt that materials have been collected capable of improving the adopted values of the moon's diameter and horizontal parallax. One of the most interesting results is the introduction of a new and accurate method of determining the time of first contact, by observing with a spectroscope the gradual occultation of the bright lines of the chromosphere. This we owe to Prof. Young, of Dartmouth College. By keeping the center of the slit directed to the point at which the contact is to take place, the observer is forewarned of the approach of the moon's limb by the shortening of the bright lines belonging to the chromosphere. The line C seen to grow steadily shorter until it is totally extinguished. The moment of disappearance of the last bright ray is of course that of the first contact."

DURANGITE.—Prof. George J. Brush describes, in *Silliman's Journal* for September, a new mineral sent to him for examination by Mr. Henry G. Hanks, of San Francisco. It was found in Durango, Mexico. "The crystals,"—says Prof. Brush,—"have a rhombic aspect; color, bright orange-red, almost exactly the shade of the Uralian chromate of lead; streak, cream-yellow; luster, vitreous; hardness, 5; spec. grav., 3.95—4.03. Mr. J. M. Blake makes the crystallization monoclinic." Mr. Blake adds a note to the article, in which he states that he defers a detailed account of his observations upon it in the hope that he may have an opportunity to examine other specimens. He says the figure of Keilhauite in Dana's Mineralogy, (5th ed. p. 387) is a pretty good representation of the new mineral. Prof. Brush believes it to be the only native fluo-arsenate which has been observed. He proposes for it the name *Durangite.*

Novelties on Exhibition at the Mechanics' Fair.

ENGINE SHAFT DYNAMOMETER, OR POWER MEASURER.

Mr. Sutton, of Portland, Oregon, exhibits his new dynamometer, a description of which was given in the Mining and Scientific Press several months ago. The object is to measure exactly the amount of power that is being used in a machine, for comparative purposes or for a basis of payment in letting power, a practice now so universal. Strange to say, no perfect or practical dynamometer, has hitherto been invented. A remark to this effect in the London *Engineer*, in commenting upon several devices shown at the Paris Exposition, drew Mr. Sutton on to this problem; and he thinks that the objection of working differently under different circumstances of speed, etc., made against previously invented dynamometers, has been overcome in this.

The principle employed is that of applying springs between the motor and the moved parts, with an index attached showing constantly how much compression of the springs corresponds to the requirements of the machine at work.

The method of application is as simple as the principle: two disks on a shaft, the one fast, and the other movable and attached to the pulley that drives the machine whose power is to be measured. In this manner the pulley may be said to be fast to the shaft likewise, but intermediately through the springs. A pencil, on an automatic recording contrivance, makes record of the exact amount of power exerted at every instant. Mr. Sutton estimates the cost of his power measurer at about $80, and of the automatic recorder at about $5. The dynamometer on exhibition measures up to thirteen horse-power. It is an invention of much practical importance, if it will be found in the least degree to answer its purpose. It can be fastened to any shaft, anywhere, without trouble; and expresses the power in foot-pounds (one pound raised a foot in height,) which can easily be calculated into horse-power.

SCREW BOLT WORKS.

"The San Francisco Screw Bolt Works" is another of the practical outbranchings of well-directed industry and capital in San Francisco, such as we chronicle gladly, because beneficial to the community as well as individuals. Messrs. Phelps & Co., at No. 13 and 15 Brannan street, make a specialty of manufacturing screw bolts, machine and bridge bolts, nuts, etc., the showing of which, in the machinery department, is suggestive of the immense benefit that can accrue to the country, and the encouragement to all kinds of undertakings that may be given by the opportunity to get at moderate prices, by wholesale, articles of that useful kind.

BARLEY-SAVING FEED BOX.

Horses waste, by throwing over, from one-eighth to one-quarter of the barley in the trough or box that may be placed before them. If this waste can be avoided, the saving in a few months of time will evidently amount to quite an item. A stable (full size) labelled "Whitehead and Democrat," at the Fair, accomplishes the desired point by letting the barley down, by a separate channel, back of the trough, to the bottom of the feed box, where it emerges only as fast as it is eaten away. A measuring contrivance in the conduit consists of a hollow half cylinder placed horizontally, which lets down the barley by the quart, on pulling a cord that revolves the cylinder half way round, so as to empty its contents.

GLASS BENDING.

Curious things in this line are now done for novelty in window architecture. At Mallon & Boyle's location (glass cutters, near the fountain) may also seen several very large plates of one-eighth inch thick glass, bent cylindrically, and also spherically; making great curved panes, and monster watch glasses. Bent glass in house finishing admits very pleasingly of the exercise of an artistic taste, and of much variety in the uses and effects to be had from daylight.

Boys' Steam Engines.—Two additional boy-made engines have been placed in the machinery department, viz., one by Patrick Wallace, a 3½ horse power, upright stationary engine—a fine piece of work—and another by Michael Lawton; both of the boys being apprentices at the Union Iron Works, where apprentices have been favored even to the disadvantage of the employers.

Surveyors' Instruments.—John Roach, of 540 Washington street, has brought in a splendid case of surveyors' and draughtsmans' instruments, which are worthy of examination by lovers of the exact. Past the fountain on the left hand side.

Chinese Ware.—It is said that the Chinese are inferior to the Japanese, but especially inferior to us, in the quality and tastefulness of their manufactures. The two cases of China ware in the central art gallery warrant a more favorable verdict, being equal, in that species of ware, to the best art products we have seen. The exhibitors' names (Chinese) are not placarded.

Boat Launching in Stormy Weather. The model of Capt. Edward Wakeman's boat-detaching apparatus, lately exhibited at the Merchants' Exchange, and which has been ordered for the boats in the revenue service, is placed near the photograph gallery, and will be explained this evening by the inventor himself.

Pacific Saw Manufactory.—A magnificent showing is again made by the enterprising firm of Spaulding, Sheffield & Patterson. We scarcely dare to begin on the subject of their specialty, for fear that we will fail to do justice; but the walls near the photograph gallery will better tell the tale than we can. Such an exhibition would do credit to Sheffield town itself.

Turbine at Work.—Fuller & Co. have added materially to the interest of the machinery department by putting in operation a small Bodine Jouval turbine of three inches diameter and two horse-power, in a glazed case, to be run by means of a one-inch water-pipe, under 30 pounds pressure. One of these turbines of the same size used on Water street, Boston, runs three printing presses—and this, it is expected, will be attached to some of the wood-working machines in the vicinity. A Blake's Patent Steam Pump, "No. 3," (steam engine and pump combined) exhibited by Berry & Place, furnishes the water and pressure.

Kindleberger & Arnold's Inventions. Machinery can be made to do anything. Mention an article in demand, the use of which, at a small price, is a public desideratum, and you will not need even to express the wish for a machine—almost before you conceive of the necessity for it an inventor will walk into the Mechanics' Institute Fair with a model under his arm, or a working device to do the thing by wholesale. We could cite no better illustration of the limitless capacity of invention than will be afforded by a few minutes observation of Messrs. K. & A's several machines,—to make blind slats, and to wire them, and his double door hinge. See how complicated the work is, and how easily and quickly it is done; the consequence, that window blinds, a thing of comfort, are cheap, and the inventor himself profits largely by the operation, as well as the public whose wants are served.

"Mother," said Ike Partington, "did you know that the 'iron horse' had but one ear?" "One ear! merciful gracious, child, what do you mean?" "Why, the engineer, of course."

Improved Projectile.

We give herewith a pictorial representation of an improved projectile, the invention of Mr. A. F. Potter, of Oakland. This projectile accomplishes, perfectly, what no other one in use can do—it causes the ball to travel and strike the mark, point first. These projectiles are intended to be fired from smooth-bores; the spiral flange attached to the ball giving it the desired rotary motion, which greatly aids its penetrating power and accuracy. Contrary to what might at first be supposed, its flight is accomplished with less resistance from the air than either the ordinary or minnie bullet; this is proven by its noiseless flight, while all other projectiles are accompanied with more or less hissing sound, due to the friction, and of course, resistance of the atmosphere.

Mr. Potter invented a two-flanged projectile in the second year of the war of rebellion, and generously tendered the same through the then Secretary of War, to the United States Government. Experiments were made with it, under the direction of the War Department, which were not entirely satisfactory. The inventor afterwards added another flange, which be found accomplished the desired object perfectly—that of lighting the projectile upon its point, which the inventor claims will be the case in 99 out of any 100 trials. This projectile renders a smooth-bore equally as effective as a rifled barrel. The patent for this invention was secured through the Mining and Scientific Press Patent Agency.

A Woman's Invention.—Yesterday a little machine was placed on exhibition near the Mining Press stand, and last evening it was put in motion to illustrate the principle on which it works and the use for which it is designed. It is the invention of a young lady of this city, Mary P. Carpenter, and is an improved fluting machine. The construction is exceedingly simple. First, there is a small cast iron heater, like the body of a miniature stove. Through this at one end run two cylindrical shafts of composition metal, copper preponderating. Outside of the heater is a surrounding case of tin and wood, the tin lining to protect the outer case of wood, which being a non-conductor of heat, protects the fabric on one side and the hand on the other. The metal shafts extend through, and on one end is adjusted the crank, and the opposite end the corrugated fluting cylinders, the grooves of which mash like cogs. These may be changed to suit the style of work—for fine or coarse fluting. The border to be fluted is passed between the cylinders by turning the crank. The cylinders may be heated in three minutes with a gas jet, or with charcoal, and will retain their heat a long time. The inventor has applied for a patent.—*Bulletin, Wednesday, Sept. 22d.*

New Incorporations.

S. F. Laundry Asso'n.—Increase of capital stock to the sum of $25,000; to be divided into 250 shares.

Ancient River Bed Gravel M. Co.—Black Oak Mining District, Placer County. Sept. 21st. Capital stock, $150,000, divided into 15,000 shares. Trustees: W. S. Manning, Peter W. Randle, W. W. Lawton, H. H. Blake and G. C. Lake.

New Era G. & S. M. Co.—Sept. 24th. Trustees: S. F. Reynolds (President), Jas. Battersby (Vice President), Albert Shepard, J. C. Toady, R. A. Robinson and C. H. Chamberlain. Secretary and Treasurer, D. McLaren.

Cosala S. M. Co.—Sept. 21st. Trustees: J. Mora Moss, John Wright, Charles Meinecke, W. W. Arey, and Charles Baum (Secretary.

Recent Patents.

Ore Crushing Mill.—J. Harvey Day, Walla, W. T. The above named invention contemplates the construction of a mill for crushing rock or quartz, which can be operated at a small expense of power, and at the same time perform very effective work. It consists of a series of disks mounted one upon another in a peculiar manner, each disk having a crushing surface on its lower rim. These disks form a pile, and are united to each other by universal joints, so that they can be made to drop on either side, and thus bring the crushing shoe into the track below. The whole pile is surmounted by a heavy weight, which is also connected to the upper disk by a universal joint, and has a grinding surface at its lower outside edge. The weight and the plates or disks are so set that when standing vertically there will be a space between each pair of grinding surfaces; but when inclined to one side the grinding or crushing face of the weight will rest on any one that may be in the track. Motion being given to the weight, it will revolve about a vertical line through the center of the base, and thus cause all the crushing surfaces to come successively together.

Wheel for Vehicles.—Timothy R. Smith, San Francisco, Cal. Inventors have long tried to construct some kind of wheel which would overcome the objections to the ordinary wooden one. The wooden wheel does very well in the city, where a blacksmith's or wagon-maker's shop can be found when wanted; but when they are employed on long journeys, especially during the summer, they soon shrink and fall to pieces, and where no "physician" can be found to mend matters. Mr. Smith claims that he has invented a wheel which will not be subject to any of these difficulties. The wheel is made entirely of iron. The hub is formed of a number of segments and rings, having rubber washers and packing between them. The spokes are hollow (he prefers gas-pipe), and are inserted two between each two segments of the hub, when the segments are firmly bound together by bolts and nuts. The felloe is also of iron. The rubber packing in the hub breaks the concussions to which the wheel is subjected. The weight of the wheel will be no greater than that of the ordinary wheel, while its strength is far greater.

Mail Bag.—Zara T. Sweet, Davisville, Cal. This invention relates to the manner of fastening the mouth of the bag, and it consists in inserting a wire, formed into the shape of an ellipse, around the upper or open end of the bag. A cover is also made in the form of an ellipse, and has a groove passing entirely around its edge. When it is desired to close the bag, the cover is placed so that the wire will lie in the groove, and the two ends of the wire are drawn strongly together and secured by a padlock, thus effectually closing it. When the cover is removed, the bag is suspended by strings, or other convenient device, which is secured to the encircling wire, thus giving a convenient mouth into which the mail or express matter can be thrown. Mr. Sweet, the inventor of this device, is also the patentee of several other promising inventions.

Iron Smelting.—Hanscom & Co., of the Ætna Iron Works, are putting up a cupola furnace to smelt and cast Oregon iron into building ornaments. An opportunity is here offered to witness the principles of smelting in application. The blower to be used is a No. 5 Root's rotary, sent to the Fair by Keep & Bargion, of Stockton. On Saturday evening, between 8 and 9 o'clock, the first castings will be made.

A Social Glass to which Ladies are addicted—The mirror.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, September 25, 1869.

Financial.

Telegraphic dispatches received yesterday from New York, convey the unpleasant information that gold gambling is being carried on with increased fervency. Yesterday gold jumped to 135¾ in New York. At 1 o'clock it dropped to 135, and at 3 o'clock to 133⅞. At the same time, sterling exchange changed from 108¾ to 108⅝, which will have the effect of sending European gold across the Atlantic to realize the high premium obtainable in New York. It is also affirmed that Erie Railroad stock suffered a decline of 20 per cent. yesterday, showing a decided panic in the stock market. Unfortunately for us, the feverish and unhealthy condition of New York finances exerts a pernicious effect upon all our business relations. Heavy capitalists, who are well supplied with coin and bullion, transfer it to New York by telegraph, to realize the premium, producing a scarcity here, and seriously crippling our local requirements. The stringency so caused raises the rate of interest here, and the transferred gold, having done its work in New York, is again reproduced in this market, to benefit by such advance in rates. That such a condition of affairs should exist at the time when we are marketing our heavy grain crops is especially to be deplored. In a short time the tax collector will make his annual collections, absorbing large amounts of our coin. On the other hand, payments made to the interior for domestic produce will commence to gravitate toward the commercial center, and demands for duties will begin to diminish. In the meantime, a spirit of greater economy obtains among the masses, caused by the monetary stringency which has existed for some time past. In November, the Treasury will let loose large amounts of gold, in the shape of interest, tending to give greater ease to the market. Our merchants do not find themselves laboring under a scarcity of money, although it is not as plentiful as might be wished, and rates have undergone no change from our last quotations. We learn of little stringency, and this fact is the best evidence of a wholesome financial condition, in view of the desperate struggle going on in Wall street.

The exports of Treasure from Sept. 1st to date have been as follows:

Sept. 4—Per Japan—		
To China	$316,218 04	
To Japan	24,878 00	
		$341,096 04
Sept. 1 to 9—Overland to New York		530,511 34
Sept. 14—Per Colorado—		
To England	$449,670 02	
To France	177,304 18	
To Central America	11,940 00	
To Panama	20,000 00	
		658,914 20
Sept. 10 to 15—Overland to New York		477,500 00
Sept. 17—Per Speedwell to La Union		10,000 00
Sept. 16 to 20—Overland to New York		519,577 51
Total since September 1st, 1869		$2,946,599 09
Previously this year		25,999,830 42
Total since January 1st, 1869		$28,946,429 51
Corresponding period, 1868		21,894,905 84
Increase this year		$1,052,523 67

The duties paid at the Custom House in this city from September 17th to date have been as follows:

September 17	$41,235 44
September 18	30,857 14
September 20	18,201 08
September 21	26,782 64
September 22	53,690 28
September 23	30,771 21
Previously in September	402,449 59
In September to date	$663,677 38
In August	769,589 56
In July	942,814 71
In June	675,051 81
In May	595,030 24
In April	554,882 05
In March	789,447 40
In February	602,349 01
In January	532,997 97
Total since January 1st, 1869	$6,116,831 12
Corresponding period, 1868	6,344,034 76
Decrease this year	$227,203 64

In this market Legal Tenders—at 10 o'clock yesterday morning—ruled at five or six per cent. above the rate of gold in New York, offering to sell at 71@72, and buy at 70. In view of this sudden rise, it is difficult to obtain exchange on Atlantic cities. At the close, Legal Tenders rose to 75.

Money was in active request in all the Eastern markets at date of our latest mail advices. Rates raised, according to the character of the borrowers, from 6 to 10 per cent. for call loans; the former figure being paid on Government securities; but the medium of 7 to 8 per cent. generally obtained. We learn that Mr. Boutwell has instructed the several Assistant Treasurers to withhold from circulation all ten-dollar greenbacks now held or which may be retired in future, until the whole issue of $90,000,000 has been returned. This is done because of the extensive forgeries of this denomination. Although nothing is said about the new issue, it is probable that the old notes will be immediately replaced by new ones as fast as retired, so as not to cripple the movement of Western grain and Southern cotton crops, as the demand for bills of this denomination is very large for those purposes. Some difficulty is experienced in making time loans, as a general belief obtains that money will be scarce and the market stringent by the middle of October. We have patiently searched for some good reason for this impression, but find no sufficient grounds outside the fickle and unreliable character of Wall and Broad-street speculations.

City Stocks.

Dullness pervades the stock market in every department. The sales consummated are very light. San Francisco Gas stock was disposed of at $82 50, and Spring Valley Water at $63@63 25 per share.

The returns of our local insurance companies to the Internal Revenue Department for the month of August and previously this year have been as follows, upon a currency basis of 74 cents on the dollar for the month of January, 77¼ cents for February and March, 75¾ cents for April, 73¾ cents for May, 74½ cents for June and July, and 74 cents for August.

	August.	Previously this year.	Total.
Pacific	$121,184	$241,215	$362,401
Union	35,329	267,891	303,220
Fireman's Fund	36,714	237,360	274,074
California	8,305	71,981	80,286
Merchants' Mutual Marine	22,546	179,640	202,186
Occidental	23,909	162,789	186,698
Home Mutual	15,731	98,235	114,166
Peoples'	20,513	122,332	142,845
Total	$286,901	$1,910,955	$2,197,856
Same time in 1868	222,311	1,192,075	1,414,386
Increase in 1869	$64,590	$718,880	$783,470

The above statement shows a falling off of $13,367 from the receipts in July. The receipts of the several companies in August as compared with July show the following difference:

	Increase.	Decrease.
Pacific	.....	$3,752
Union	.....	2,280
Fireman's Fund	.....	1,090
California	.....	987
Merchants' Mutual Marine	$1,642	.....
Occidental	.....	2,978
Home Mutual	.....	84
People's	.....	3,868

The receipts of the city railroads for the month of August and previously this year were as follows:

	August.	Previously this year.	Total.
Omnibus	$24,864	$172,050	$196,914
North Beach & Mission	25,836	166,321	192,206
Central	17,950	115,886	133,836
Front Street, Mission & Ocean	9,538	65,028	74,566
Market Street	12,650	82,559	94,609
Potrero and Bay View	3,202	21,574	24,776
City	4,566	3,308	7,874
Totals	$98,126	$626,729	$724,855
Same time in 1868	96,645	558,193	654,838
Increase in 1869	$1,481	$68,536	$70,017

As compared with the total receipts in July, we find a decrease of $3,283. The receipts of August as against July show the following difference:

	Increase.	Decrease.
Omnibus	.....	$1,206
North Beach and Mission	.....	75
Central	.....	936
Front Street, Mission and Ocean	.....	1,169
Market Street	.....	522
Potrero and Bay View	.....	543
City	$1,238	.....

Mining Share Market.

During the past week the mining share market has not gained any activity as compared with the previous week. The line of stocks dealt in has been confined to a less number of claims, and the general business has resulted in a considerable depression in nearly all the stocks offered. With regard to the present condition of the mines our information is meagre, and does not show that important developments have recently been made; however, persistency characterizes operations to a marked extent, and the prospectore pursue their work with unflagging energy.

CHOLLAR-POTOSI—was in the market to a considerable extent. For the week ending Sept. 17th, 967 tons of ore were mined, and 1,188 sent to custom mills. Of this amount the Blue Wing stope yielded 730, New Tunnel 165, and Grass Valley 72 tons. The sill floor of the New Tunnel, in the north drift, continues to yield a good quality of ore, and has not changed much in general appearance during the past seven days. On the 18th floor the drift running north is in quartz, with some ore, and looks very favorably for finding a good body of ore. On the 20th they sent 154½ tons of ore to four custom mills.

HALE & NORCROSS—under about the usual sales, dropped considerably during the period under review. During the week ending Sept. 18th the upper mine produced 381, and the lower mine 627, making a total of 1,008 tons. In the same time they delivered 820½ tons, leaving on hand 2,086 tons. The sinking of the main shaft is progressing favorably. In the fifth level the breasts in the south stope are reported to look exceedingly well, the pay ore having a width of from 12 to 17 feet in this raise. A drift 35 feet above this stope is now 12 feet south of the raise, average assays of ore found here showing $96 to the ton. The breasts in the north body in this level look well, and are unchanged. The west drift from the fifth floor of this level is now in the vein 17 feet, but has not yet reached its western wall. The assays from this ore vary from $34 to $186 per ton. This is evidently the vein the Savage Company has been working for years.

GOULD & CURRY—sold to a limited extent, at a smart decline. During the week ending Sept. 20th they mined 272 tons, and shipped 339 tons for reduction. During the same time 12 feet have been added to the north drift running south from the 7th station, and 15 feet to the south drift. So far during the current month bullion to the amount of $23,693 has been received.—OPHIR, also, shows a considerable fall. The drift was 606 feet in length on the 21st inst.

We clip the following from the White Pine *News*, with reference to White Pine stocks:

AURORA CONSOLIDATED—still continues shipping 40 to 60 tons per day to mill from the Earl mine. The Ward Beecher mine, belonging to this company, has been leased, and will also be constantly shipping ore. The Last Chance, another of its mines, has recently been started up, and is yielding ore of good quality for reduction. This company is working with unusual energy, employing a large force of men, and meeting with the success it deserves.—CALIFORNIA has not yet put on a full force, but will do so in a few days. Only four men at work at present. There are over 1,000 tons of ore on the dumps awaiting the completion of the Stanford mill.—CONSOLIDATED CHLORIDE FLAT continues, with its force of 125 men, to send about 50 tons per day to mill for reduction.—EBERHARDT is still working with a force of 25 or 30 men, and taking out a large quantity of excellent ore.—The suit of the Hidden Treasure *vs.* Rathburn has suddenly terminated by the plaintiff's withdrawing a juror.

CHILLED DIES.—G. W. Coffey, of the Risdon Iron Works, exhibits very large "internally and externally double-chilled battery shoes and dies," which are not handsome to look at, but are said to be a great improvement upon the ordinary ones in their wearing quality.

THERE is a law in Delaware which requires a husband to give bonds in $200 to keep the peace. They appear to have a clear conception of the marriage contract in that State.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alleghany Cons., Sierra co., Sept. 24, 30c.	Oct. 25	Nov. 15
American, Storey co., Sept. 15, $1 50.	Oct. 19	Nov 4
Black Jacket, White Pine, Aug. 18, 10c.	Sept. 17	Oct. 21
Bucklin, White Pine, July 31, 10c.	Aug. 20	Sept. 30
Bullion, Storey co., Nev., Aug. 21, $10.	Pay. immediately.	
Crown Point, Storey co., Nev., Aug. 6, $5.	Sept. 9	Sept. 24
Cala. Slate, Calaveras co., Sept. 7, $1.	Oct 7	Oct. 24
Cherokee Flat, Butte co., Sept. 3 $5.	Oct 6	Oct 21
Daney Town co., Nev., Aug. 7, 5c.	Sept. 8	Sept. 26
Eclipse Cons., White Pine, Aug. 11, 50c.	Sept 16	Oct. 8
Etna, White Pine, Aug. 27, 15c.	Sept. 30	Oct. 20
Evening Star No. 1, White Pine, Aug. 25, 10c.	Oct. 2	Oct. 22
Featherstone, White Pine, Aug. 31, 30c.	Oct 7	Oct. 26
Florida Flat Cons., W. P., Sept. 16, $1.	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c.	Oct. 18	Nov 6
Glenwood, El Dorado co., Aug. 2, 30c.	Sept. 8	Sept. 28
Hornet, White Pine, July 21, 10c.	Sept. 8	Sept 30
Hearst, White Pine, Sept. 15, 50c.	Nov. 3	Nov. 22
Hope Gravel, Nevada co, Sept. 20, $1.	Oct. 25	Nov. 15
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
Ion, White Pine, July 14, 10c.	Aug. 19	Sept. 24
Julia, Storey co., Nev., Aug. 4, 75c.	Sept. 7	Sept. 25
Kinsel, Tuolumne co., Aug. 2, $2 50.	Sept. 8	Sept. 25
Kentuck, Storey co., Nev., Aug. 5, $10	Sept. 6	Sept. 25
La Pinta, Sonora, Mex., July 8, 2½c.	Sept 13	Oct. 1
Maxwell, Amador co., Sept. 22, $1.	Nov. 1	Nov. 24
Metropolitan, White Pine, Sept. 11, $2.50.	Oct. 13	Nov. 3
North Bloomfield, Nevada co., Sept. 20, $5.	Oct. 22	Nov. 8
Orig. Hid. Treasure, White Pine, Aug. 8, $2.	Oct. 4	Oct 23
Pacific Cons., White Pine, July 30, 10c.	Sept. 8	Sept. 28
Pocotillo, White Pine, Aug. 2, $2.	Sept. 6	Sept 27
Phœnix, White Pine, July 12, 15c.	Aug. 12	Sept 6
Rhyan, Alpine co., Sept. 16, 25c.	Oct. 20	Nov. 6
Rathburn, White Pine, Aug. 27, 50c.	Oct. 1	Oct. 21
R. R. M. Co., Humboldt, Nev., July 27, 20c.	Sept. 13	Oct. 1
Siempre Viva, Mexico, Sept. 17, $1.50.	Oct. 21	Nov. 10
Silver Wave, White Pine, Aug. 28, 20c.	Sept. 2	Oct. 20
San Jacinto, Tin, San Bernardino co., Aug 20, 5c.	Oct 4	Oct 18
Segregated Belcher, Storey co., Aug. 5, $1.	Sept. 9	Sept. 29
Senator, Storey co., Nev., Sept 6, 5c.	Oct. 18	Nov. 8
Sierra, Douglass co., Sept. 20, $2.	Sept. 23	Oct. 14
Tayloe, El Dorado co., Aug. 25, 20c.	Oct. 4	Oct. 20
Thunderbolt, White Pine, Sept. 14, 5c.	Oct. 18	Nov. 6
White Pine Mutual, Sept. 15, $1.	Oct. 20	Nov. 8
Wells, White Pine, Aug. 10, 30c.	Sept. 17	Oct. 7
West California, White Pine, July 10, 10c.	Aug. 17	Sept. 25
Wheeler, Esmeralda co., Sept. 20, $1.	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

Mineral City, White Pine, Aug. 24, 50c.	Oct. 7—Oct. 22
Miser's Dream	Meeting Oct. 6
North Star	Meeting Sept. 25
Occidental, Storey co., Nev.	Annual Meeting Oct 9
Siempre Viva	Adjourned Meeting Oct. 4
Segregated Belcher, Storey co.	Annual Meeting Oct. 5
Washtello	Adjourned Meeting Oct. 18

LATEST DIVIDEND.

Amador Co., div. $8 per share	Payable August 7, 1869
Alpha Cons., Storey co., Nev., div. $2.	Pay. June 19, 1868
Bacon, Storey co., Nev., div.	Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.	May 10, 1869
Crown Point, dividend, $7.50.	Payable Sept. 12 1865
Cholhar Potosi, div., $2.	Payable August 6, 1869
Eureka, div. $5.	Payable August 10, 1869
Empire M. & M., Nev., dividend $6.	Payable May 15, 1867
Gould & Curry, div., $7.50.	Payable May 15, 1867
Gold Hill Q. M. & M., dividend, $7 50.	Payable July 1, 1868
Golden Charlot, Idaho, div. $3.	Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c.	Sh. Pay. Aug. 26, 1869
Hale & Norcross, div. $6.	Payable July 10, 1869
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $1.	Payable July 1, 1868
Keystone, Sierra co., div., $32.	Payable May 6, 1869
Kentuck, div., $20 per share.	Payable Jan. 10, 1868
North Star, dividend, $5.	Payable Sept. 15, 1868
Occidental, div. $2.	Payable March 2, 1869
Pacific Unassessable, div.	Payable June 15, 1868
Sand Spring Salt, dividend $1.	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50.	Payable Dec 19, 1868
Savage, Virginia, Nev., dividend, $4.	Payable May 11, 1869
Sand Springs Salt, Virginia, div. $1.	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c.	Pay. August 10, 1869
Virginia & G. H. Water Co., Dividend, payable April 16, 1869	
Yellow Jacket, div., $5.	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, September 24, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1884	—	—
United States Bonds, 5-20s, 1862	87	89
Legal Tender Notes	73	75
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par	& int.
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par	& int.
San Francisco City and Co. Sch'l Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	25	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	40	50
State Telegraph Co	25	—
Spring Valley Water Co	63	63¼
GAS COMPANIES.		
San Francisco Gas Co	80	82
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	70
Central Railroad	56	—
North Beach and Mission Railroad	67½	69
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	94	95
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	91
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97¾	100
The Bank of California	150	160
MINING STOCKS—WASHOE DISTRICT.		
Alpha	8	10
Baltimore American	—	—
Belcher	12½	13
Bullion, G. H.	15	16
Crown Point	16	16½
Gole (Va.)	—	—
Confidence	—	—
Consolidated Virginia	—	5
Cholhar-Potosi	14	14¼
Daney	—	2
Exchequer	4½	5
Empire Mill and Mining Co	7½	25
Gould & Curry	60	—
Gold Hill Quartz	17½	25
Hale & Norcross	105	107
Imperial	26	27
Julia	—	¾
Justice and Independent	5	6
Kentuck	177	178
Lady Bryan	20	30
American	½	¾
Occidental	7	10
Ophir	10	10¼
Overman	66	67
Segregated Belcher	7	9
Savage	32¾	33
Sierra Nevada	5	5½
Union	—	—
United States	—	—
Yellow Jacket	33½	34
MISCELLANEOUS MINING STOCKS.		
Amador (California)	292	295
Aurora, White Pine	5	8
Eureka, (California)	225	200
Golden Chariot (Idaho)	—	30
Silver Cord (Idaho)	½	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	4

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, September 24, 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 50
Do. Superdine	4 00	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 05	@	1 60
Oats, ₱ 100 lbs	1 05	@	1 30
Barley, ₱ 100 lbs	90	@	1 35
Beans, ₱ 100 lbs	3 50	@	5 00
Potatoes, ₱ 100 lbs	75	@	1 50
Hay, ₱ ton	8 00	@	13 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, cattle, dressed, ₱ lb	—	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	7
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	14½	@	14¾
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	20	@	20
Do. Rio	—	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	53	@	55
Candles, ₱ lb	15	@	18
Ranch Butter, ₱ lb	40	@	60
Isthmus Butter, ₱ lb	25	@	35
Cheese, California, ₱ lb	15	@	17
Eggs, ₱ dozen	60	@	65
Lard, ₱ lb	16	@	17
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	—	@	10

Retail Prices.

Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	35	@	40
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	35	@	40
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	70	@	75
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	—	@	22
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	—
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	5
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	60
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	30	@	35
Soap, Pale and C. O.	10	@	12
Soap, Castile, ₱ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, September 24, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1¾@2¼c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2½c ₱ lb.

Scotch and English Pig Iron ₱ ton	$33 50	@	$35 00
White Pig Iron	30 00	@	32 00
Refined Bar, bad assortment ₱ lb	— 03	@	— —
Refined Bar, good assortment, ₱ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04½	@	— —
Plate, No. 5 to 9	— —	@	— 04½
Sheet, No. 10 to 13	— 04½	@	5 —
Sheet, No. 14 to 20	— 05	@	— 5½
Sheet, No. 24 to 27	— 05	@	— 6½

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb

Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— —	@	— 35
STEEL.—English Cast Steel, ₱ lb	— —	@	— 15
QUICKSILVER.—₱ lb	— 55	@	— 60
LEAD.—Pig, ₱ lb	— 7¾	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
ZINC.—Sheets, ₱ lb	— 10½	@	— 11
BORAX.—California, ₱ lb	— 38	@	— 40

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Sept. 24, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.				Per ton
12 per cent. ore	$24 00	18 per cent. ore			$41 40
13 " "	26 65	19 " "			44 65
14 " "	29 40	20 " "			48 00
15 " "	32 25	25 " "			62 50
16 " "	35 20	30 " "			75 60
17 " "	38 25				

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

These prices, corrected by W. T. Atwood, we believe will be found substantially correct, and can be realized at this date.

A DETROIT lad, aged thirteen, who has been reading dime novels very much, of late, accoutered himself with a rusty shotgun and a satchel of provisions, the other day, and started for the woods, where he proposed to hunt and fish for a living, after the manner of the ten cent heroes. He was taken into the woodshed and whipped.

THE St. Louis papers have got a first-class sensation. An injured husband sues a rich merchant for seducing his wife.

To Remove Stains from your Character—Get rich.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

The Leviathan.—*Chronicle*, Sept. 11th: On Thursday this mine was examined by W. T. Rickard, for an English company interested. He does not hesitate to pronounce it one of the richest copper mines in the world. One hundred tons of the No. 1 ore—50 to 60 per cent. copper—will be shipped to England immediately by way of San Francisco, and the lower grades will be smelted at the mine. Works capable of reducing 6 tons per day will be immediately erected.

BUTTE COUNTY.

Taking out the Dust.—*Record*, 18th: Reports from Russ Johnson & Co., who have a large flume in the North Fork, represent them as taking out the dust with a seventy Chinamen power. This is the fifth year that Mr. Johnson has tried the North Fork. It is said they are finding very rich deposits.

CALAVERAS COUNTY.

Quartz.—*Chronicle*, 18th: The surface from the claim of Hadlock & Co., crushed in Smith's mill, yielded eight and a half dollars per ton. We understand that it is the intention of the proprietors to thoroughly prospect the vein.

INYO COUNTY.

Cerro Gordo.—Los Angeles *News*, 18th: A private letter says: Mr. Woodworth, of San Francisco, now proprietor of the San Ignacio mine, is extracting very rich ore. There is also a German physician who recently bought the San Felipe mine for five thousand dollars. This gentleman has begun work on said mine with the most flattering prospects.

Belshaw is doing a fine business with his furnace and machinery. Mr. Schmidt commenced smelting last week for a new company styled the Cerro Gordo Smelting Company. The mills of Col. Stevenson and Cervantes & Co., are also in active operation. From facts before us, and the energy displayed on every side, there can be no doubt of the greatest success and the fulfillment of our brightest hopes.

NEVADA COUNTY.

Omega.—*Transcript*, 15th: The Prescott claims have been worked this season by Geo. W. Kidd & Co., and first rate results obtained. We saw yesterday two bars, worth $12,500, the result of the last washing. The gold from Omega is of extreme fineness, assaying $20 to the ounce. A partial clean up made before the last, yielded $3,200, making a total of $15,700.

More Mining.—Same of 16th: The success of Ole Allen, in demonstrating the existence of a channel in the Kansas ground, has attracted the attention of other parties, and a company has been organized in San Francisco, which will, in a few weeks, commence operations in the adjoining claims. The opening of that channel will give employment to a number of men and yield a large amount of bullion. The signs of the times for this locality are getting brighter every day.

Struck Gravel.—Same of 17th: The San José Co., which has been prospecting in the ground adjoining Maltman & Marselus' claims, on Wednesday raised and struck a bed of gravel, which has every indication of being good pay dirt.

Mining Items.—18th: Forty tons of excellent rock from Mount Auburn ledge, will be crushed at Murchie's mill. The ledge is three feet thick, and the rock of first grade. The first crushing paid $32 per ton. In the claim adjoining, the parties have fine prospects, and the Vigilance mine,—as it was called,—since capital has been invested in its development, promises well. One of the new style mills, in which the stem acts directly upon the stamp, is to be erected.

Eureka.—*Gazette*, 16th: We learn that times are lively in Eureka District. The Bloomfield Gravel Co. have a large force engaged on their ditch, and quartz operations are carried on energetically. Mr. Stewart is working the Mohawk and Dillon mines, owned by parties in San Francisco. The Mohawk is five feet in width, and a crushing of 50 tons recently made, yielded over $600. The Dillon is smaller, but the rock pays better. Both will be worked steadily, and the owners purpose erecting a mill next spring. Andrew Veatch is working the Erie mine, two miles this side of Graniteville, and having the rock crushed at the Black and Young mill. The mine of the Mutual Co.—formerly the Jim—is now paying well. All the mills that are in condition for working, are running most of the time, and prospects generally are favorable.

McClellan Ledge.—Same of 7th: The McClellan ledge is being opened in a thorough manner. The incline is down 70 ft., the ledge abounds in sulphurets, and is 2½ ft. thick. The company own 1,500 ft. of ground, and shares are sold at $6 a foot.

Steep Hollow.—Same of 18th: The gravel claims opened by White, Coe and others, continue to yield well, and rich nuggets are being taken out nearly every day. On Monday one of the miners picked out a lump of pure gold worth $42.50. The company have a tunnel extending across the gravel channel, the latter being 200 ft. wide on the bottom. The pay streak of gravel lies on the bedrock, and is two feet thick.

The *Gazette* says: "Now that a start has been made in opening the gravel claims on the continuation of the Nebraska lead, we may expect a return of something like the old times for Nevada. With the knowledge now acquired of the course of the lead, enterprises can be undertaken with little risk. It is reported that a company has been organized to open another claim near the Kansas, and arrangements may be effected this fall for resuming operations on the Harmony ground, and also for opening the ground of the Cold Spring Co., still further up the ridge."

Wm. Penn Mine.—Grass Valley *National*, Sept. 20th: The owners of this mine are putting up a 25-horse power engine and a 6-inch pump. Their shaft is down 164 ft. on the ledge, which is looking well, and is from 2½ to 3 ft. in thickness. They will commence sinking next week.

PLUMAS COUNTY.

Rich Quartz.—Quincy *National*, 11th: We were shown this week some very rich quartz from a ledge four miles from this place, opened a few weeks ago. It was located for a San Francisco company, who would to-day have a mill running had it not been for certain misrepresentations. Some of the rock paid, by mortar, upwards of $10 a pound. A tunnel is about being run along the lode.

SAN BERNARDINO COUNTY.

New Gold Diggings.—*Guardian*, 11th: Our little burg was considerably excrcised on Tuesday, by the report of rich gold diggings in the vicinity of Lytle Creek. Some 40 or 50 persons have left town for the new places. All sorts of rumors are afloat. We learn that the placers are between the headwaters of the San Gabriel and Colorado.

SIERRA COUNTY.

Brush Creek Mine.—*Messenger*, 18th: We paid a visit to the Brush Creek mine and mill on Saturday, and think it is one of the most complete establishments that have ever fallen under our notice. The mill building is a most substantial structure, 40 by 90 ft. in the clear, with a wing, or L, 20 by 40 ft., in which are the engine and boiler. The mill has power for twenty stamps, though at present running only 10. It has two Knox pans and a Payne & Stevens patent Buddle. The machinery is driven by a 50-horse power engine, The shaft is 300 ft. deep. In the year past, there has been taken out and crushed 3,380 tons of quartz, which has yielded for the year's run of 52 weeks, a total of $105,845.04, or an average of $31.31 per ton.

SISKIYOU COUNTY.

Scott Valley.—Correspondent of Yreka *Union*, 18th: Fred. Turk has discovered a quartz ledge which promises to be one of the richest in the county. I saw 1¼ lbs. of rock crushed in a mortar which yielded 50 cents. Mr. Turk says he can make on an average $5 a day with a hand mortar. The ledge is near Mugginsville.

Smith, Hand & Co. have discovered a ledge at the head of Smith's Gulch, that is three ft. wide, with good casings, and prospects very rich. The boys have named it the Banner ledge.

TRINITY COUNTY.

Indian Creek.—*Journal*, 18th: On the right hand bank Sigfried & Warfield, and Jonathan Smith & Co. are cleaning bedrock. Their claims are supplied with water from Stratton's ditch and have paid well. Coombs & Silcox are reöpening their claim, employing five or six hands. On the hill above town, and above any of the ditches, Thos. Bochran has struck good drifting dirt, which is dumped through a slide below the ditch before it can be washed. With these exceptions, the creek is worked by Portuguese miners.

On Spring Gulch, Tim Hennessey and Martin Keefe have a good claim in the bank. The past had been a bad season for water in all the dry diggings, but these boys have done very well, though their claim is a heavy one to work.

YUBA COUNTY.

Nelson Point.—*Appeal*, Sept. 18th: Johnson & Co. have got into the river, and have averaged $8 per day to the hand. Wormley, Kohr & Co. have abandoned their claim on Nelson and opened out in the river, just below Johnson, and are getting good prospects—five cents to the pan in the gravel. Ed. Field and Stevens, on Nelson Creek, lost the bedrock, but they are getting some pay again. Ellerman & Co. are making $5 per day to the man. Miller & Co., on Dickson Creek, are making wages. Hill & Co., lower down the creek, have good prospects, but have not washed up this season. Oliver & McGuire will get down in their wing-dam this week. Heath & Co., of Argentine, are doing well piping talcose slate; they say they are making from $16 to $25 per day to the hand; they have sunk a shaft 60 ft. in this slate and got as good prospects at the bottom as top. Chris. Beck, on Squirrel Creek, near the last named place, has good prospects, and is digging ditch to convey water to his diggings.

Arizona.

The Sterling.—Prescott *Miner*, Sept. 4th: Work is progressing favorably. Three shifts of hands are taking out ore, of which there is an abundance. After a thorough test of the machinery, the mill was shut down, there being no water to run it. It is the intention to keep on taking out ore.

The Paul & Wood Process.—Noyes & Lount are satisfied that they have mastered this process, and, by it, can work all sorts of rebellious ores. Recently, Mr. Noyes informs us, 500 pounds of Sterling tailings yielded an ounce and a half of gold. The rock, of which they were the debris, had been worked carefully in an arastra. The next test will be made on raw ore.

Good Sized Pieces.—Tom Whitehead, a youthful miner of Upper Hassayampa, showed us three pieces of gold, out of his placer claim on the Hassayampa, below the Chase mill, which weighed, respectively, $13.50, $7, and $4. He corralled them all in one day, with a rocker, and several dollars' worth of fine gold. Owing to the scarcity of water, but little mining is being done on the creek, but that little, it appears, pays well. Two men at work on a bar near Tom's claim are making from $5 to $6 per day.

Vulture.—Francis Hinton has become possessed of 1,400 feet on the Vulture lode; also, of the Wickenburg ten-stamp mill. At latest dates from Wickenburg, the ore was paying well.

Idaho.

Bedrock Shaft.—Idaho City *World*, Sept. 9th: This work is progressing, and a depth of 110 ft. has been reached. We visited the scene on Tuesday, and found that the water was being hailed out at the rate of 1,800 gallons per hour with the large bucket alone. The elevating apparatus had become temporarily disabled. When both the bucket and elevator are at work, the miners have no trouble in keeping the shaft clear of water.

Placerville.—Mr. Wm. Lynch, President of the Gold Hill Quartz Co., which bought the 25-stamp mill of Mr. Classen informs us that they started the mill, running 20 stamps, on Monday, and will make a run of two weeks before cleaning up. They have about 600 tons of rock from the Gold Hill ledge on the dump.

The Loon Creek Diggings.—Correspondent of Boise City *Statesman*, Sept. 14th: Varney & Co's clean up for three days past has been, 1st, $153; 2d, $170; and yesterday estimated at $120. Some fine specimens, weighing from $3 to $5, have been taken up each day. There are five men at work in this claim. There are three companies above this one joining each other, and from what I can learn they are taking out from $30 to $40 per day to the hand. In a week or ten days there will be some 20 or 30 sluices running. That there will be three or four miles of good creek mining is no longer doubtful.

Another letter in the *Statesman* of the 16th, says; A party prospecting on Trail Creek five miles from here, yesterday reported 25 cents to the pan; and last night the camp was alive with wild rumors of the new discovery. Three miles from town, up the stream, Loon Creek divides itself into three branches; Trail Creek is the right hand fork; the Middle Fork, which is the longest, and the Left Hand Fork, which heads northeast. A party just returned from the latter, report $8 and $10 diggings. I conversed with one, and he said that the ground would pay half an ounce a day to the hand. The prospects in the vicinity of town are flattering. Reports from the claim where the creek has been flumed in the cañon, state that the company cleaned up on Friday and Saturday $600 each day. I am informed by one of the men at work in the Craig claim that they have taken out the past week $40 per day to the hand. Of the five or six claims opposite town now at work, I am safe in saying that they average $20 per day to the hand. On the whole, I conclude that there is plenty of work for more men than are now in the camp, at good wages.

The *World* says: During the past week several parties have returned from the new diggings. They bring no additional news except that two companies are at work in the river, and the claims are said to pay about $8 per day to the hand. Other companies are opening claims, but the indications are that no great amount of work will be done this fall. From all we can gather, we are satisfied that the new diggings, though having some rich spots, will not prove extensive enough to give employment to more than 300 or 400 persons. Mr. Jas. Armstrong, one of the original discoverers, passed through this place a few days since, on his way to Boise City, having sold out his interest for $2,500. The majority of those who have returned here seem to have no intention of going back again this fall.

Montana.

[Owing to the pressure upon our columns, we are compelled this week to omit our summary of mining news from Colorado and Montana. A communication from the last-named Territory will be found in another column.—Eds. Press.]

Nevada.

COPE DISTRICT.

Mountain City.—Correspondent Elko *Independent*, 18th: Lytle & Co. are cutting a ditch to supply the placer mines with water; it will cost $10,000. At present, but little can be done at placer mining. Some few miners are packing dirt to the river, and are making good wages. The dust assays $12 per ounce. In quartz, Drew, Cutter & Co. have run two tunnels for the Buckeye ledge, one of 150 ft., and the other 60 ft. In the former an abundance of good ore has been disclosed, averaging $250 per ton in silver, and from $25 to $75 per ton in gold. To-day, an offer was made of $20 per foot, in cash, for 900 ft. in the Mountain City ledge, which was refused. There are 1,600 ft. in the discovery claim. From Maj. Drew I learn that a 10-stamp mill, with all the modern improvements, has been purchased in San Francisco to work the Argenta mine.

REESE RIVER.

Cortez District.—*Reveille*, 14th: We are informed by Mr. S. O. Clifford, from Cortez District, that more activity prevails than for several years. There are 100 men in the district. Mr. Clifford is one of the owners of a mine called Magenta, which is yielding extraordinary ore. Wenhan & Co. own the only quartz mill in the district. The mill charges $40 per ton for reducing custom ore.

The copper of Cortez is likely to prove, if reports be true, as valuable as that of Battle Mountain. Its ores may be hauled to the railroad over a good road 25 miles in length.

Morey District.—Same of 13th: Mr. Ogden is employing Chinese miners. The mines of the company will soon yield large quantities of ore for milling. Some four tons, the first fruits of Chinese labor, were shipped for reduction at the Hamilton mill in this city.

Spring Valley District.—13th: This district, 70 miles southeast from Austin, was organized in July. It is estimated that about 50 claims will yield milling ore at the surface. We have seen a specimen from the Murray, a massive piece of compact ore weighing 124 lbs., all over which could be seen horn silver and the purplish black stetefeldtite—the latter mineral being the chief bearer of silver in the southeastern part of the State. The same of 17th says: Three tons of ore from Spring Valley has arrived here for reduction at the Manhattan mill. It is from the Mayott claim. One and a half tons from the Reeves and Berry, worked at that mill $667 per ton. The Providence ledge is said to be 60 ft. wide.

Mineral Hill.—Same of 17th: Yesterday 7½ tons of Mineral Hill ore were hauled to the Manhattan mill, which makes 12 tons now in this city. The ore was produced by several claims and is known to be uncommonly good, as the former workings gave a yield of $600 to $800 per ton. Prospectors in the district say there is no lean ore there.

Rich.—We mentioned on Wednesday an assay of pulp of ore produced by a mine near the Chase in the Yankee Blade section, the rate of which was $1,108 per ton. The

rich batch was small, however. Since it was worked tho owners of tho mine have sent 10 tons of what they call seeond class ore to tho mill, the yield of which averaged $320 per ton. Ton tons of orc—which were extracted in a few days by a few miners—produced nearly $3,000.

AUSTIN IMPROVING.—Claims on Lauder Hill, long deserted, are now yielding rich chloride ores. Our businesemen and owners of property have recovered from tho temporary panie into which they were thrown hy tho changos caused hy the railroad, and appear to be contented with the prospects of Austin. Wo think their heads are level.

The *Rereille*, which npon the outbreak of White Pine, contracted into a weekly, has resumed its daily issue.

BULLION PRODUCED.—*Rereille*, 18th: During tho week ending this date, liullion was produced in this city as follows: Manhattan mill, 12,456 ozs.; Mettacom mill, 5,800 ozs.

WASHOE.

[In tho Stock Circular, in another portion of this paper will be found late mining news from this district.]

OPHIR.—*Enterprise*, 19th: The drift to the west from the hottom of the main shaft is now in 600 feet. It is thought that 200 feet farther will carry it through the ledgo aud into the west country rock. Tho company are now putting in an air-pump. They have already in position a Root's patent hlower, of a larger size than any one yet iu use on the Comstock range.

GOULD & CURRY.—The Bonner shaft is now down 1,185 feet. At tho depth of 1,160 feet a drift has been run to the westward 75 feet, without finding anything of value. Last Thursday a Root's blower was started, which now supplies fresh air to tho secoud etation, and will eventually supply air to the lower or seventh station. Ahout 30 tons per day of ore worth $50 per ton is being extracted.

SAVAGE.—The mine is yielding 80 tons of ore per day. The main shaft is heing sunk 100 feet deeper for the purpose of opening a new level. New steel wire cables are also heing put in.

HALE & NORCNOSS.—This company are sinking for a new level, which will be opened at a depth of 1,100 feet helow tho surface. They have a fine deposit of ore in their present lower level, with much good ore in sight in other parts of the mine. They are using Elko coal instead of wood, as an experiment.

CHOLLAR-POTOSI.—Yielding 175 tons of ore per day. Fine ore has heen found in the "New Tunnel."

OCCIDENTAL.—Lower tunnel is progressing rapidly. Rock is easily picked down. Bunches of ore that assay well occasionally found.

YELLOW JACKET.—About 180 tons of ore per day are heing raised from the south shaft. The north ehaft has not yet heen cleared of mud and water, but it is said that thoy will get down to the 700-foot level in ahout a week.

VIRGINIA CONSOLIDATED.—Shaft down 300 feet. Rock hard. What water there is, comes up in the tubs with the dirt.

OVERMAN is yielding 23 tons daily.

LADY BRYAN.—Gold Hill *News*, 18th: Hereafter the capital will he $2,700,000, divided into 18,000 shares of $150 each, against the old capital of $1,800,000, divided into 6,000 shares of $3,000 each.

SIERRA NEVADA.—Virginia Cor. S. F. *Herald*, 19th: The Sierra Nevada is getting aloug finely, hoth mine and mill always working at a very regular, eteady-going, hullion-producing rate. Tho first clean-up for the preeent month was made last Thursday, and was, if anything, a little hetter than the average. The state of the mine remaine ahout the eame, except that the hody of ore recently developed in the car-track tunnel improves.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, Sept. 18th: The regular routino of work is progressing in our principal mines; the mills are all kept busy, and large quantities of oro are accumulating on the dumps, hesides. The principal mines are employing all the men they eau work to advantage. There are fewer idle men on our streets than at any former time. Attention is heing attracted to the Base Range, as inviting profitable investments in the erection of small furnaces, at an expense of only one or two hundred dollars, somewhat on the Moxican plan. Several of these simple smeltiug works have heeu put iu operation, with satisfactory results. Already the weekly product of our smelting works is quite respectable, though we are unable to give the amount.

LEAD BULLION.—*Empire*, 18th: Creighton'e agent at Elko furnishes the following statement of argentiferous lead received at their office the present month, for shipment helow: Total number of hars, 198, weighing 19,375 ponnds. At the dato the foregoing statement was mado there were 35,102 pounds on the road between this city and Elko. The entire amount was shipped from the White Pine Smelting Works, at Swansea, and consigued to D. D. Shattuck, Sau Francisco.

HIDDEN TREASURE AND RATHBURN.—The suit of the former against the latter came to a eudden termination on the 17th, by withdrawal of a juror. The Rathburn immediately commenced a suit of a similar character on its owu account against the former.

ITEMS.—*News*, 18th: Tho Monteze mine, Argyle Hill, is likely to provo an excellent property. The ledge is apparently 25 or 30 feet wido. A drift now being run aeross it has attained a length of 20 feet, all the way in good ore. Wo were shown a small bar of the value of $5.13, the product of 80 pounds of average ore....A 20-stamp mill is huilding in Chicago for J. W. Wadleigh, to be erected in the vicinity of the California mine. It is to be shipped in timo to he crected this fall....*Empire*, 15th: There is not less than $2,000,000 worth of oro awaiting reduction on the various dumps throughout the district....James Shields has taken a contract to extract several thousand tons of ore from the Ward Beecher mine. It will take until next June....In the Eherhardt, which we visited the other day, good ore is brought to light wherever a pick is struck iu the ground; and instead of the miuo heing worked out, or heing unahle to yield ore worth $15 per ton, we do not believe a ton of ore can he taken from the poorest place in the mine where it has been opened, which will not yield at least douhle that amount, and tons of that character would be more difficult to fiud than tons would which will give a yield of $6,000 per ton. We saw the mine in nearly the same condition as on our last visit. When you are down in it you can eee nothing but huge masses of chloride and horn silver on all sides....Same of 18th: The ledge in the Herman has been stripped for a considerable distance. A splendid hody of chloride ore is in sight. Near by is the Oakland, showing some good ore in the ledge and a large amount on the dump. The New York mine, southwest of the Oakland, has heen purchased by Cincinnati parties, who propose putting on workmen immediately. ....Same of 19th: We saw some ore from the Oakland mine that was completely plated with horn silver. Forty tons of high grade ore are ou the dump. Shaft 55 feet deep....*News*, 16th: The Silver Vault Tunnel struck their ledge a few days since, and are obtaining fair assays....Noonday has struck good ors....First bar from the Tom Paine, valued at $986, was shipped on 14th inst....Virginia mine has suspended operations for the present, owing to cost of milling their ore. This was, all told, $58 per tou. The ore last month averaged $160....*Empire*, 19th: The Treasnre mill yielded $805,000 per month for July and August.

UNCLE JOE TRENCH.—*Enterprise*, 15th: Our old friend has just had seventy tons of ore from his mine crushed at Avery & Co.'s Newark mill, and obtained bullion to the value of $8,113. The rock was taken from the very surface of the lead, and in mining it some immense pieces of rock were hlasted out and rolled down the hill to the road, where they were put upon the wagons and sent to tho mill where they were worked with the rest.

RICH ASSAYS.—Virginia correspondent of S. F. *Herald* 19th, says: I had eome ore eent me three or four days ago to get assayed. It was from the Minnesota claim, three miles north of White Pine, near Morton & Wells' Three-mile Station, on the Elko road—a new discovery. I gave a third of it each to Wiegand & Co. and Ruhling & Co;, Gold Hill, and the other third to Bousfield & Co., Virginia. The three assaye turned out within $100 of each other, and averaged a little over $3,500 to the ton. They speak of their claim, however, as containiug only two pay etreaks of this ore, from one inch to ten in. in width.

OUTSIDE DISTRICTS.—Cor. of *Enterprise*, 14th: Eureka district—Four large ledges have been partially opened. Abundance of wood, water and grass. The Bromide Hill Mining Co. is operating there....Patterson district, samo of 17th: Martin & Davidson'e mill goes into operation this week. There is a large amount of work going on, and the ledges ehow well....Considerable work has been done in Shoehone district....Dr. Gilbert reports everything ae looking well in Kern district....*Reveille*, 14th: The Chihuahua shaft in Newark district is down 100 ft. Forty tons of excellent ore in the dump.

California Manufacturers.

California and the Pacifio Coast is fast hecoming independent of the East for tho great hulk of her manufactures. For many years after tho advent of the gold seekers on this coast, our people imported almost everything which entered into the daily eonsumption and necessities of civilized life. California was supposed to be useful only for gold digging—an out-of-the-way region where people might come to retrieve a lost fortune, or build up an original one, which was eupposed all would go elsewhere to spend. Even our wheat and flour was brought from a distant and foreign conntry.

But a ehort time sinco nearly all onr furniture, bulky as that article is, came from the East. Our carriages, another equally hulky article, were manufactured iu New York or New England. Our boots and shoes came from Boston; while Eastward bound ships carried thither California hides to be tanned and worked up, aud take the round trip hack again *via* Cape Horn—thus making a doublo transportatiou of 20,000 miles oach way. Even our most ordinary clothing came from ahroad, as well as almost every other article of ordinary supply. Now how changed! California from beiug an importer of cereals, has become the second, if not tho first wheat growing State in the Union, and hundreds of ships are annually required to transport her grain crop ahroad, which finds its way into nearly every country on the globe.

Notwithstanding tho great scarcity and high price of skilled labor, the cost of transportation, loss of interest, etc., so favors us that most of the principal hranches of manufacture are now carried on here to a greater or less extent. The exhibition which is now in progress in thie city, affords ample evidence of this fact.

The skill and perfection to which we have arrived in many hranches of manufacture, is really remarkable for so new a country. Take for instance, the article of furniture. The rickety fabrications, which made one almost sick of the word furniture, in the early days of our advent here, have given place to artistic excellence and matchless beauty in this branch of industry which is nowhere in the wide world excelled. Even the peerless galleries of the most refined European nobleman might be furnished from San Francisco workshops, with articles of furniture, which, for gracefulness, durability and pleasing and elegant forms and finish, would fill the measures of excellenco formed by the most scrutinizing eye.

Owing to the late unfortunate differonces between employers and employed, our boot and shoo business, just at this time, is somewhat under a cloud; but the prospect of its future never was hrighter. Cheap labor is being gradually introduced, hy the employment of which manufacturers will soon he enahled to once more regain their footing, and under circumstances which will effectually preclude any further interruption, either from Eastern competition, or from excessive and impossible demands of home lahor. Our production of leather is steadily increasing in quantity and improving in quality. We have now a large numher of tanneries, scattered all through tho State, and especially in and near this city and in Santa Cruz. Not less than seven or eight are now in active operation in the last named place, one of which is turning out $20,000 sides a year; the total annual product of the Santa Cruz tanneries beiug ahout 60,000.

We can point with equal pride to the success of the woolen manufactures, which are now springing up all over the State and in Oregon. San Francisco will soon have in operatiou one of the largest woolen factories in the world, operating with a capital of five millions of dollars. Our machine shops, foundries, etc.,) are fully able to supply our heaviest as well as our most intricate necessities. We have now a rolling mill, a puddling furnace, and two iron furnaces in full hlast, turning ont pig iron, and working up the samo into auy form from a nail-rod to railroad iron.

In the finer articles of cutlery, etc., although we are not yet able to supply but a tithe of our necessities, we are able to turn out work with a degree of excellence which has elicited admiration from even the most appreciative European huyers.

There are numerous other branches of business which might be enumerated, did time and space permit; and there are many others still, not yet established here, which might he eutered upon with every prospect of success. The time has now come when manufacturing on this coast is no longer an experiment; and when our own capital and capital from abroad would do well to look into the same, as a means for profitahle investment. Manufactures must form an important element iu tho prosperity of our people—without them uo State or natiou can bo really prosperous aud independent.

THE LAUREL BILLIARD PALACE.—Everybody was surprised and delighted at suddenness of the construction and the beautiful interior of Messrs. Strahlo & Hughes' laurel billiard palace. Nobody in the Fair saw it built, so far as heard from. Certainly we were looking in another direction at the moment, just hefore our eyes wandered thither accidentally and disclosed it to us. Its existence in the Fair is a wonder attrihutable probably to some magic cue in the possession of Strahle & Hughes. Were those panels derived from tropical forests, or from trees growing in distant regions, unaccessible or out of the world, we ehould go into ecstacies over their heauty, and write two eolumns abont the laurel billiard palace.

WE notice that the California Wine Cooperage, M. Fulda, Son & Co., proprietors, are manufacturing four large casks for the Lake Vineyard Wine Co., one of which is very nearly completed, and will be on exhibition at the Mechanics' Fair next week. It is made of Eastern white-oak staves, three inches thick at the head and chine, and 2¼ thick in the hnlge. Its dimensions are 11x8 feet, bound with fourteen iron hoops, weighing together 1,200 pounds. The whole cask will weigh when finished, 5,000 pounds, and will have a capacity of 4,148 gallons. It is by far the largest ever made on this coast, and probably the largest used for the purpose in the United States.

A NEW STORE TRUCK.—It has always been known that the common store truck needed improvement, but while all other whecled vehicles have, from time to time, been altered or changed, this is now about what it was fifty years ago. A. V. Smith, of this city, exhibits a store and steamboat truck having three important improvements. It has a "dead lock," and while upright aud being pulled down, cannot roll hack. When down, it is free to roll either way. The importance of this is obvious. The brake to ho applied only to be used ahout wharves, and on the inclined gang-plank of a steamboat. The load rests on a emall portion of the middle of the axle and can he rocked or rolled on the wheels alternately when going down a grade, thus impeding progress.

It has very crooked handles on a new plan, and cousequently no tight grasp is uecessary to pull up a grade, or through mud or sand. Its cost does not exceed that of the ordinary truck.

THE Univereal Yankee Nation dispatches from India to the London papers, dated August 20th, state that the muuicipal council of Sogin, (Cocnin China) is hereafter to be chosen one-half from the Americau residents of that city. The Yankees meet with moro encouragement in China than the Chinese do in America.

MINING AND SCIENTIFIC PRESS.

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San Francisco:
Saturday Morning, Sept. 25, 1869.

Notices to Correspondents.

Jewel, Mokelnmne Hill.—The diamond sandstone of Golcouda is composed of more or less compact hreccia, red and white, without fossils. With the subjacent limestone it covers large areas, in almost horizontal layers; hnt at the edge of the plains of Cuddapah it rises in highly-inclined strata nnderlaid hy granite.

S. P. M., San Lnis Ohispo.—In the earlier stages of society, hoth of old and new countries, even where civilization may have advanced, the planting of timber trees is neglected, owing to self-sown forests heing found more than sufficient for a lengthy period to snpply the wants of a comparatively sparse population. As the latter increasee, and civilization advances, forests, in many cases, are viewed as impediments to agriculture, and not as sources of wealth, Under such impressions, the removal of trees sometimes hecomee more thought of, than the desire for their propagation, or the manner in which, if planted, they should he treated so as to prodnce the hest timher in the shortest time, and in the greatest amount. The stndy of these points, conjoined with the question how the trees can he made at the eame time to yield some profit whilst the timber is maturing, is one that mnst, at a not very distant day, become an important question in California.

Land Surveyor.—For the purpose of decimalising calculations for the acre, it has heen proposed to do the same as is now being done in the United States with the English standard ton of 2,240 pounds, which in America, is more conveniently calculated as 2,000 pounds. Thns the standard acre is 4,840 yards, in place of which, if the standard was made 4,000 yards, the calculations could be easily decimalized as follows: One equare perch equals 25, instead of 30¼ square yards; forty sqnare perches, or one rood, equals 1,000 instead of 1,210 square yards; four sqnare roods or one acre, eqnals 4,000, instead of 4,840 square yards. To assimilate these proportions to lineal measurement, it has heen suggested that the lineal mile should be 2,000 yards in place of 1,700 as at present. By this means, the sqnare mile, in place of comprising 640 acres, would cover 1,000 acres, and every 1,000 square milee would embrace one million acres.

Diurnal.—The late Mr. W. Hopkins, of Cambridge, England, demonstrated from astronomical and mathematical data, that the crust and fluid nucleue of the earth (if the latter exists as he admitted) must move together nearly as if they formed one hody, while Prof. Heunessy, of the Irish Catholic University, maintains that there must he great frictiou betwcen the nncleus and the interior of the crust. This distiuction hetween the deductions arrived at by Prof. Hennessy, and those hy M. Delesse, respecting the mode hy which the cooling of the central mass and suhseqnent crystallization occurs, are the reverse of each other.

Statistics—From the Great American Desert.

An anthority in the September *Overland Monthly*, whose fignres should have the merit of heing advisedly put together, estimates the population of "White Pine" at 15,000; of Hamilton, the county seat and point of arrival and departure, at 4,000, of Treasnre City, at 3,000, and of Shermantown, at 2,000,—all of which cities have theaters, if not churches. The railroad cities, Trnckee, Reno, Winnemucca, Elko, Carlin, and Ogden, already count their popnlation hy the thousands. Trnckee is known and recognized as a "large city;" Elko, if we are to believe reports, is even larger than any of the White Pine cities, an official estimating its population at 5,000, which is perhaps not more than a thonsand above the mark.

Treasure Hill and its spnrs are yielding from $300,000 to $400,000 monthly, according to the stated bullion reports. The Great American Desert, thus it appears, has "come ont." Winter is at present approaching, the Pogonip occasionally threatens on the elevations as September advances, and railroad passengers from White Pine are heard to remark that "everybody is getting out of the country,"—for winter, that is, hecause great confidence seems to he felt by good judges in the permanence of the mines.

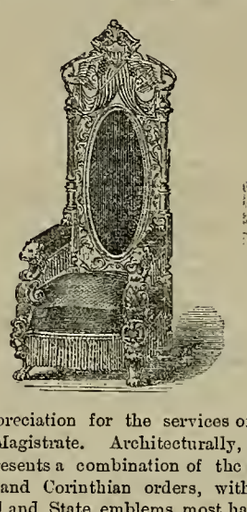
To the rabbits and to the Indians who love the piñon's shade, this "Great American Desert," of sage flats and scrub pine mountains, is really a land of beauty. We will acknowlede that even to us, who have campaigned in it, the sage brush valleys seem, after a few years of absence, a plcasant land; with its corn-colored plains from golden to baker's brown, its sweet-scented trees, and here and there its green oases with plenty of fresh water; with its great open fire places, and substantial fare. Look at the country as it will be by and by, when all these little oases shall be enlarged hy irrigated additions, with plentiful fruit trees in hearing, and the travelcr himself no longer in a craze after wealth; tho host a man who is settled contentedly with a reatonahle share of prosperity. "Blooming and hlossoming like the rose" will not he too poetical a description. There are peculiarities and heanties helonging to those inter-montane valleys that will make people attached to them; beauties of sky, of season, of sunrise and sunset, that would prove a rich field of stndy to our original landscapists, our Gignouxs, Churches, and Bierstadts.

Of the permanently yielding wealth that rests embowelled in the interior wastes, and of the excellent producing capahilities of Nevada's irrigated soil, we need not here speak. Men of good judgment do not pronounce it a "hilk" because it fails to reward any kind of fools' nndertaking with a fortune. American adaptiveness is making out of many and many a spot in the "desert," a place fit to live in, no longer out of the world.

Rickard's Slum Amalgamator. — A practical idea of Mr. Rickard's, to which we have heretofore alluded, for slum amalgamation, tried with favorahle results on some Virginia City slums recently, in England, is in proccss of introduction into some of onr mills, a large machine to do the work heing at present under way at the Union Foundry. A great amalgamating surface with agitation, embraces the whole, the machine being very simple—a trough four by six feet and four feet deep, having in it a horizontal shaft, with some dozene of amalgamated disks attached in screw arrangemeut for stirring. For argillaccous slums, like those of Virginia, this arrangement for an amalgamator is precisely what common sense would suggest. To give a hetter idea of the machine, however, we will have an illustration of it next week.

The Presidential Chair—Art in Furniture.

It is seldom that so mnch of art and rare excellence in furniture is grouped in so small a space as is devoted to the furniture show in the present exhibition at the Pavilion. Art evidently occupies an important position, if, indeed, she does not reign supreme, in the economy and design of furniture mannfactured in this State. Her influence is everywhere apparent, whether in the matchless beauty of the various woods selected, or in the judgment and taste that is employed in giving them form and beanty. Any attempt at a full description of all the heautiful articles on exhibition, within anything like moderate limits, would prove a failure; hence, for to-day, we confine onrselves to a pictorial representation and particular description of the elegant chair designed as a present to Gen. Grant, and which has been manufactured hy N. P. Cole & Co., of this city, to the order of a numher of gentlemen from various parts of the State, who have taken this method of manifesting their regard



and appreciation for the services of our Chief Magistrate. Architecturally, this chair presents a combination of the semi-Gothic and Corinthian orders, with our National and State emblems most happily combined, and eo arranged that each hecomes a part of the main design. Being a token of esteem "from California to President Grant," it has been most appropriately constructed entirely from California material, and by California workmen. The wood-work is from our heautiful native laurel, npholstered in light hlue hroad-cloth, trimmed with heavy silk fringe in corresponding color.

The carving is most elegantly designed and most elaborately executed. The front legs represent the feet of the California lion, bearing up the fruits of our State, with sprigs of live oak and laurel in relief. The uprights of the arms consist of elegant scroll-work, chaste in design and execution, each most appropriately surmounted with the head of a grizzly, guarding the entrance to the Presidential seat.

The back of the chair is worked out from a single slah of selected laurel, the general design of which is distinctly shown in the accompanying engraving. The oval center is seen surrounded with richly carved scroll-work. Upon either side rests a chastely designed Corinthian column, each supporting a glohe, upon which are perched American eagles, with wings raised and thrown back in defiant attitude, and grasping in their beaks the folds of the national flag, two of which are elegantly draped, with standards across, directly ahove the oval. Surmounting these flags is a laurel wreath, encircling the American shield; over and crowning the whole of which is a beautifully designed and carved piece of scroll work, forming an appropriate finish to this really artistic piece of California furniture. This elegant piece of work was designed and carried out in all its particulars, to successful completion, hy Mr. B. P. Moore, a well-known and popular attache of this establisment.

Railroad Passes and Transmontane Roads.

Must we have another railroad across the mountains? asks the Virginia *Enterprise*, in reviewing the Chicago *Tribune's* argument maintaining such necessity. Snow sheds and snow slides, and fires in summer, are the difficnlties of the present road.

Along the railroad, and in Central Pacific Railroad circles, the opinion is very confidently expressed that no other road will, for an age, he nndertaken to he hnilt hy any responsihle company. However desirable would he a more open road, with the pure air of the mountains to hreathe, instead of shed dust and smoke, with daylight and grand monntain views to enjoy as we pass, it seems all but certain that we will have to content ourselves in this latitnde with the present Central Pacific route. The great channel is marked out, and the river of trade and human life is flowing, wearing into the hanks here, and depositing its flats and terraces there. Another crossing will prohably be made on Oregon account, near the Oregon houndary, for the C. P. R. R. Co., northern extension. The Southern Pacific Railroad will surely be built, and speedily; the undertaking heing easy in comparison with the first great overland railroad, since more thau a third of the distance will not necessarily have to be built by the company at all, viz., the stretch from tho Missouri river to the Rocky Mountains, and the distance between San Francisco and San Diego; the latter city hei ng the natural terminus for tho southern road. A glance at the map will suffice to convince how much shorter a piece of work this southern road will he. It remains a question of time, bnt of no very great duration, how soon Montana and Oregon will strike hands with Minnesota, and give real impulse to Holladay's terminus at Puget Sound.

Will You Tap the Comstock Lode?

Mr. A. Sutro is lecturing at Virginia City, and advertising and pushing generally the great project of tho Sutro Tunnel Company, to tap the Comstock lode. Thie company owns a liheral franchise, ohtained from the national govornment as an encouragement to proceed with the enterprise,—the importance of which is, on general principles, precisely equal to tho importance of the ore deposits of the Comstock, in continuous depth. But matters look confused to us, on this tunnel question, for Sutro is "fighting the Bank" with his keenest spear; while the Bank of California, the controling owner of the Comstock lode, sits brooding over the mining shafts of Virginia City as silently and as innocently as if it had done nothing at all, and inteuded to do nothing in the world detrimental to tho mining interest in general, or the project of the Sutro Tunnel Company in particular.

Whoever may succeed to the ownorship of this franchise, let the work be hegun; for that the Comstock lode warrants it, is the general opinion expressed from late developments. And let it he tapped deep enough to make it worth tho while to have an adit.

White Pine Silver Lead, assaying from $60 to $80 per ton, is being shipped to this city by the "White Pine Mining Company" at a cost of $40 per ton. It can be here cupelled or desilverized with zinc at $5 per ton; leaving a profit of $15 to $35 per ton, without reckoning the value of the lead.

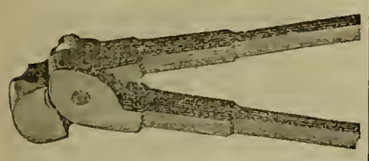
The case of the Hidden Treasure *vs.* The Rathhurn, is withdrawn, the Hidden Treasure Company paying the costs. Some of the heavy stockholders in the one were also in the other.

The Austin *Reveille* is again a daily, hut we miss the trenchant, sharp pen of its former inspiration.

Axtell's Improved Wire Cutter.

We give, annexed, a representation of a new and very useful instrument, recently patented by Henry Axtell, of San Francisco, which is designed for use in cutting wire or bolt-iron of the smaller sizes, whereby much time is saved, and the work is more conveniently and neatly done than by the instruments generally used for such a purpose.

Referring to the accompanying engraving, it will be observed that the instrument is formed of two pieces connected togother by a rivet or bolt. These two parts act as levers, having the rivet for a fulcrum. Each part has a cutting-edge; but the cutting-edges are arranged so as to work eccentrically to each other, and on a line with one side of the instrument; thus rendering the instrument far more effective than it would be with straight cutting-edges. The



short distance of the cutting-edges from the fulcrum, as compared with the long end of the levers, is such that great power may be applied to any resisting medium, which may be placed between the edges, as a piece of wire, bolt, etc. To render the tool more strong and durable, the cutting end of the lower arm, as represented, is made forked, so as to embrace within its double extremity the cutting end of the upper arm. By this means, the rivet, or bolt, which acts as a fulcrum, is supported at both ends.

This tool may be made of any desired size or strength, and is particularly adapted to cutting off the ends of bolts, in carriage making, and other similar work, as well as rivets in a fixed position; which latter object is accomplished by the cutting-edge being on a line with the side of the instrument. When made of proper size and strength, it is well adapted to blacksmith or machinists' use for cutting up small iron, and for a great variety of purposes, which must be obvious to all workers in iron, brass or copper. The instrument may be seen upon the bench, at the east end of the machinery department, at the Pavilion.

Mr. Axtell designs disposing of rights, and at once introduce his improvement throughout the United States.

IN THE RANKS AGAIN.—We would call attention to the card, in another column, of our retired Chinese Minister, Hon. J. Ross Browne. Having thrown off his official robes, Mr. B. is again in the ranks, doing good service for the State in his efforts to encourage immigration to the Pacific slope, and promote the investment here of Eastern capital.

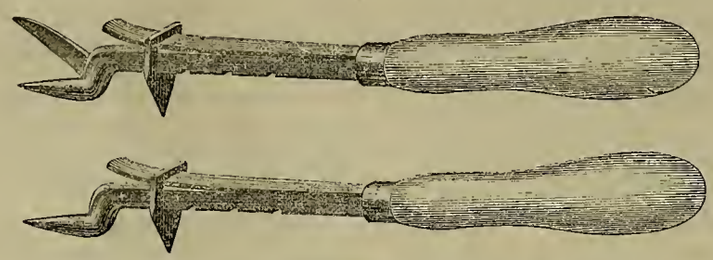
Mr. Browne possesses the happy faculty of being able to throw his best efforts always into some timely undertakings, such as are capable of producing the most important results. Where there is a case of obvious neglect by the Government—as in our former want of collected mining statistics—he sees the public's interest, and supplies the want, to his own credit and the advantage of everybody. While we are certain that his continued services at this juncture would have been good for our country's cause in China, we are glad to be able to commend his energy and promptitude in finding so speedily another unoccupied field of usefulness, which is not in any degree less important than his previous undertakings for the advancement of the Pacific coast.

THE OVERLAND MONTHLY for October is now out, and contains some highly attractive title subjects.

Improved Can Opener.

We give herewith an illustration of a device recently patented through the MINING AND SCIENTIFIC PRESS PATENT AGENCY, by Eugene F. Dewey, of this city. This device has for its object the provision of an instrument more readily adjustable and more effective in its action for the opening of cans than anything heretofore devised. It consists of a combination of cutters so arranged and adjusted that a can may be opened either by cutting out a circular disk, or by cutting in a straight line, as is desirable in opening sardine and boxes of similar construction.

Referring to the engraving, a pointed knife or cutter will be first noticed, with the edge downwards, made adjustable by being placed loosely upon the bar and held firmly in position by the slots on the under side of the bar, and the spring above. In actuating this knife, the lower rounded point upon the extremity of the bar is first thrust through the center of the can cover, when by using the handle as a lever, the knife may be carried around in a circle in the operation of cutting, thus taking out an entire disk-shaped piece. By adjusting the cutter in the slots at a greater or less distance from the point of the instrument, the disk removed may be larger or smaller, as desired.



E. F. DEWEY'S IMPROVED PATENT CAN-OPENER.

For cutting in a straight line, the flat blade or knife forming the opposite point from the round one already noticed, is first thrust through the tin, when, by bearing down upon the handle, the point of the spring already noticed acts as a fulcrum, whereby the blade is made to cut forward in a straight line; then by alternately raising and depressing the handle, and pushing the instrument forward, a cut may readily be made across the can in any direction desired. By this means we have combined in one instrument, a cutter for both circular and square cans, easily adjustable and worked; one which cannot readily get out of order. When once employed, so that its usefulness may be fully appreciated, no family using can-food would think of getting along without it.

When an exceedingly cheap instrument is essential for circular cutting only, this instrument is made without the straight cutting knife, as shown in the second figure.

The inventor is confident that he has the most easily adjusted and durable can-cutter that can be made and sold at a low price. He is now manufacturing and intends to bring them into general use. Parties who desire to purchase rights or give orders, can address E. F. Dowey, box 17, San Francisco. The instrument can be seen among the models at the FAIR PRESS office in the Pavilion.

PARTIES of miners have been engaged in prospecting the hills near Hayward's for coal, etc. One miner claims to have discovered a vein of plumbago under lime rock.

SOME of the Eastern papers say that Gen. Rosecrans will make $5,000,000 *out* of his mining speculations in this State. The report may be true, for it is doubtful whether he will make it *in* them.

THE STATE UNIVERSITY opens this week, with some necessary and appropriate flourish and talk.

Mining Machinery.

VARNEY'S PAN may be seen in operation this evening on an 80-pound batch of ore roasted by a new economical roasting process invented by Mr. Frick. The principle, in pan amalgamation, of rapid grinding, with what would otherwise be nothing more than an iron arastra, is due to Mr. Varney's practical mechanical sense. To prevent throwing over pulp by rapid revolution, he applied, as early as 1860, the counter arms which direct the pulp back again to the center, and underneath the mullers—while the quicksilver remains at the periphery to pick up all the metal that comes in contact. Mr. Varney has made a perfect iron mill of his pan, by getting the effect of the burrs in a stone,—a result very ingeniously accomplished, and multiplying the grinding capacity one hundred fold. He cuts radiating grooves into his bottom, and inserts strips of wood which soon wear into the proper corrugation. A very favorable circumstance in the iron mill, so arranged, is that both the upper and lower shoes keep nicely sharpened of themselves, requiring no dressing as with stone.

HEPBURN'S PAN, situated by the side of Varney's, was also being put into order for working this afternoon; it is worthy of special notice by those interested in milling.

Two novel crushing machines invented by Mr. John A. Collins, of Virginia City, may be seen in the same vicinity. The one is merely a model, but does the work of crushing pieces one inch in diameter, the large machine being intended for 20 inches. The other is a barrel pulverizer, by which the common disadvantage of doing the crushing work two or three times over, is avoided, the fine dust particles being carried out as fast as they are ground into that condition.

LARGE BLOWER.—The "Root's Rotary Blower," sent to the Fair in different sizes by Keep & Bargion, of Stockton, is an American invention of some importance to smelters, as it is no more costly or complicated than the ineffective common fanning mill blowers, while its power is equal to that of the far more costly cylinder blowers, of the same size. In starting smelting works, a question of the highest importance, next to cost of construction, is to have wind enough, and means of regulating it. The No. 5 rotary blower gives a pressure of 15 pounds to the square inch, or, measured by a column of water, such as would raise a column three feet high. Keep & Bargion's blowers are much used, and are found very effective for ventilation in the deep mines of this State and Nevada. A miniature blower made in this manner is found to answer excellently for a blacksmith's forge, portable or otherwise.

THE PRESS representatives attending the Mechanics' Institute Fair are: Bausman, for the *Alta;* Howe, for the *Bulletin;* Basset, for the *Herald;* Dr. Ames, for the *Times;* Rock, for the *Call;* and De Young, for the *Chronicle.* The Sacramento *Union* has a working correspondent who remains *incog.*, but "Ridinghood," of course, also comes to the Fair.

Special Compliment.

MESSRS. DEWEY & Co., *Patent Agents*—Gentlemen:—Allow us to express our thanks for the gentlemanly, prompt and business-like manner in which you have conducted our business before the United States Patent Agency at Washington, D. C. We believe that inventors on this coast will materially advance their interests by patronizing your Agency. The Reversible Door Butt and Double-Acting Blind Wiring Machine cases were hardly forwarded from your office before we were notified of their having been allowed.

JEFFERSON KINDLEBERGER,
WILLIAM A. ARNOLD.

HALLIDIE'S SUSPENSION BRIDGE across the Pavilion near the fountain, is an excellent arrangement for flying from gallery to gallery, put there in order to save lazy people the exertion of walking around a quarter of a mile. It is so light and airy that many who have come to the Fair have not seen it, though they have ogled at others in the galleries through it. That so light a structure can be both strong and durable,—at the same time that its construction is comparatively cheap,—needs only the observation of a few minutes while people are in the act of crossing to insure satisfactory conviction. Those who are interested in such practical flying machines,—to enable them to cross gorges, torrents, deep places, gaps and uncomfortable hollows in this world, and on the road to the next,—should visit the lower gallery, and look at the photographs of bridges built by Mr. Hallidie, across some of our mountain rivers.

UTILIZING THE POWER OF STEAM.—Mr J. L. Constable, the Chief Engineer o the Mechanics' Institute Fair exhibits one of Carvalho superheater at the entrance to the engine-room, open, and displaying the principles in a manner to make apparent the advantages of that important power-saving invention. A model is also shown of Constable's own process of generating steam by causing a flow of superheated steam to be met by the water from the boiler (by their own pressure) in a separate vessel, and there to generate steam by contact, of any temperature that may be desired. Another great saving of power is to be secured in this manner.

WHITE PINE CABINET.—Mr. Biggs, of E. M. Smith & Co., Treasure City, sends to the Fair nineteen boxes of ore, fossils, etc., from 107 White Pine mines, and the editor of the *Inland Empire* guarantees that every specimen in the whole collection is correctly labelled. The miners of White Pine are not generally very clear as to mineralogical distinctions; azurite, (blue carbonate of copper) and chloride of silver being quite the same thing; everything is chlorido except horn silver, and that is the metal itself. Some of these who are more than ordinarily sharp, recognize bromine—bromide of silver—very extensively. White Pine has much of interest to contribute mineralogically that is yet undetermined, and Mr. Biggs' collection will add to the attractions of the Fair.

ELKO COAL.—We saw yesterday at the Hale & Norcross hoisting works, eight tons of stone coal which comes from a mine near Elko. It is bituminous coal, and appears to be of an excellent quality. At the time of our visit to the works yesterday afternoon, they were just firing up with the coal. Mr. Fair, Superintendent of the mine, intends running the works a week with this coal, carefully noting the quantity consumed. Delivered in this city it costs about $30 per ton. Whether it will prove a cheaper fuel than wood remains to be seen. The lot we saw was but the first load of a large quantity ordered.—*Transcript, Sept. 18th.*

The telegraphic reporter of Virginia, on the 23d, says: It appears that the Elko coal, which was tested at one of the mills, does not answer. It is too light and burns too rapidly. This has been the difficulty with all coal yet found in the State.

Elegant Shell Work.

In the central Art Gallery of the Mechanics' Institute Pavilion, Mrs. John C. Daggett exhibits several pieces of most elegant shell work, made up of shells from every portion of the globe. Unlike most articles of this kind, these are really works of art. The shells are wrought into flowers of various kinds, sizes and colors, from the tiniest daisy to the full-blown rose, lily, etc. In their arrangement much taste and judgment has been shown in the proper blending of colors. It seems almost impossible that so much effect can be produced, and such a close imitation made, by shells alone, to the natural color, form leaves and petals of flowers; and yet not a particle of coloring matter has been employed in the entire collection. The shells have been merely cleansed of their extraneous matter, so as to show their natural colors in their greatest effect.

Upon one of the pieces two elegant cornucopias pour forth their riches of shell flowers and brilliants—the whole forming an oval encircling a vase of flowers and mosses. There are three with center pieces, and one which is intended for a frame, now encircling a photograph of President Grant. Mrs. D. also exhibits a shell work basket of flowers, which may be seen at the FAIR PRESS stand.

The difference between this and the like work as ordinarily seen, is as marked in the firm and durable manner in which it has been put together, as in the artistic effect displayed. The shells are all secured by durable cement or tastily arranged and hung upon delicate wires, so as to admit of quite rough handling, and of being thoroughly cleaned from dust, etc., when required. They will even stand the rough usage of the Isthmus transit to New York, when properly fastened by screws to the bottom of a box, which is the mode in which they are packed for transportation. This work is for sale; information in regard to which may be obtained at the office of the DAILY FAIR PRESS.

THE WOODEN WASHERWOMAN, is the name given to a new washing machine, invented and exhibited by Mrs. A. B. Waldron. In the construction of this machine, Mrs. W. adheres strictly to the old-fashioned device of the rubbing board; but, instead of operating upon a single board, and holding the clothes in the hands, she has contrived a wooden holder, which passes the linen back and forth between two washboards, in such a manner that the friction is brought to bear upon both sides of the garment at the same time. The clothes-holder is operated by means of a lever grasped in one hand, while the other is free to regulate the pressure as may be desired. Don't forget the "wooden washerwoman"—pass it not by; but stop and hear its merits set forth by the inventress. It is cheap and simple, and much excellence is claimed for it as an aid to the laborious process of washing.

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IT IS THE CHEAPEST, MOST durable, easiest to adjust, and cleanest apparatus to use for the purpose designed, yet offered to the public. Being constructed on simple and mechanical principles, it is not liable to get out of order, and will continue to perform its office until the materials are worn out. It can readily be adjusted, even by any inexperienced person—will scrape off the scales and cleanse the tubes just as smooth and clean as they were when new, without in the least affecting their inner surface, as the Elliptic Spring Scraper has a smooth square edge, and springs in or out to fit the tubes. It is particularly applicable for steamboat boilers when muddy water is used.

A continuous iron rod runs through the center of the top and bottom hubs. The soft steel scrapers are fastened with screws to the hubs, under the caps, which cover and protect the screws that fasten the scrapers on the hub. The scrapers are expanded or contracted by screwing or unscrewing the lower hub,—first loosening the cap. There is a collar on the rod to prevent the scrapers being jammed. An elastic or flexible brush or scraper, made of leather, rubber, or some pliable material, is attached to the nut for the purpose of removing from the tube the scale and dust loosened by the action of the scrapers.

These scrapers are made from one to six inches in diameter—the prices of those from one to three inches ranging from $5 to $12. They are now extensively used in the Eastern States. Quite a number have already been sold in this State.

For sale by McAfee, Spiers & Co., boiler makers, Howard street, between Fremont and Beale, San Francisco, and at the Union Foundry, Sacramento. E. M. D., P. O. box 17, San Francisco, Manufacturers' Agents. 24v17tf

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Also, Anti-Friction, Alloys for Journals, Type and Stamping Metals, Tinners and Plumbers' Solder, Etc.
☞The best price given for the most rebellious or refractory ores. Ores and minerals assayed and analyzed.
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4v18-3m N. E. cor. Washington and Battery streets.

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ASSAYER AND WORKER OF ORES,
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Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms.
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(Having had 33 years' experience in Europe and America,) supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

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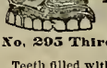
Practical Mining Engineer,
TREASURE CITY,
White Pine..... .....Nevada.
2v19tf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Teeth filled with fine gold, artificial bone, and platina. All Plate Work made and repaired of the best material, at the shortest notice, and warranted.
None cheaper and better on this coast—call and examine specimens.
North Beach and South Park cars pass the door.
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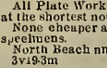
DR. KNOWLES, Dentist,
HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

JOHN ROACH, Optician,
Has removed from 622 Montgomery street to
540 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.

"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1863.]
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19-6m

Changing the Address.—No charge is made for changing the address of this paper. To give all necessary information, write us plainly as follows: "Change address of the *Mining and Scientific Press* from Mr. ... at .... P. O., ... County, ... State, to Mr. .... at .... P. O. .... County, ... State..... 186-."

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Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
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6v14tf SAN FRANCISCO

SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
24v18 1m

J. J. JONES,
CARPENTER and BUILDER,
No. 324 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
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No. 20 Fremont street, over Phœnix Iron Works, San Francisco.
Particular attention given to MODELS for the Patent Office Brands and Pattern Letters Cut. 4v18mtf

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AND LETTER CUTTER,
Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

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AQUA AMMONIA,
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—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS,
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

Chicago Advertisements.
STEELE & YANTIS,
Newspaper Advertising Agents, Dearborn Theater Building, Chicago, Ill.,
Are authorized to receive advertisements for the Mining and Scientific Press at our lowest rates, and also for any Daily, Weekly or Monthly Newspaper or Magazine in America, at publisher's lowest prices. Estimates for any number of papers desired furnished gratis. 1tv19

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Leffel, Bryson, Bodine and Chicago Turbine Water Wheels. Mill Stones and Bolting Cloths. All kinds of Cleaning Machines, including Smutters, Separators, Packers and Bran Dusters. Scales, Belting, Pecks, etc. Mill Irons and all kinds of Castings. P. O. Box, 274.
CHICAGO, ILL. 11v19-3m

H. C. SILSBY & CO.,
MANUFACTURERS OF
ROTARY STEAM FIRE ENGINES,
Hose Carriages, Reels and Carts, Power, Bronze and Hand Pumps.
No. 133 La Salle Street, - - - - Chicago.
Established at Seneca Falls, N. Y., in 1845. 1tv19 3m

To Quartz Mining Companies.
To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—
One Steam Engine, 60-horse power, made by Burden, Brooklyn, New York.
Two large Boilers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift-Pump, 6 inches, of superior make and finish.
280 feet of 5 inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.
The Company having ceased operations intend selling off their effects as speedily as possible.
For particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality, or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

Spice from the Daily Fair Press.

A HEN by day is a rooster at night.

A VEILABLE space—s woman's face.

A COMPETENCY—A little more than you have.

A FATHER to the thought—A parenthesis.

WHY is a mouse like a load of hay? Because the cat'll eat it.

A WORK OF FAITH—Eating sausages made by an unknown butcher.

WHY is the road of trangressors so hard? Because it is so much traveled.

The person who can best cater to the taste of the youug—the edu-cator.

BRIGHAM YOUNO weighs 240 pounds. Not much, if divided by twenty-seven.

SOME of the sidewalks of San Francisco are anything but paths of pleasantness.

"Didn't you, massa?" replied Pompey, "I know'd it jist tho timo it occurred.'

WHY is quinine like sausages? Because there is a good deal of bark in both of them.

A FEMALE clergyman who married a couple in Iowa kissed the bridegroom. And why not?

PHILADELPHIA has several free baths. Free lunches are more the rage in San Francisco.

WHAT is the reason so few medical men are "wide awake." Because they are always dosing.

SOME young fellows run to cheek, like cabbages, when their heads are uncultivated run to seed.

"A PRUDENT man," says a witty Frenchman, "is like a pin. His head prevents him from going too far."

"POMPEY," said a gentleman to his servant, "I did not know until to-day that you were whipped last week.'

A BUTCHER on Fourth Street advertises to sell eight pounds of sausages for a dollar. That is literally dog cheap.

ALL TEUTONS ARE NOT GERMANS.—Many of the ragged urchins who toot on tin horns are Irish.

JONES used to dote on his Sarah Jane, till he saw her at the theater with another fellow. The sight acted as an antidote.

IT is not necessary for a candle maker to be learned in the dead languages, but he should have a good knowledge of the mysteries of grease.

A MISSISSIPPI steamboat passenger fell overboard and screamed for dear life till he thought of standing up, and found the water just knee-deep.

MINX appear to be all the rage just now, great numbers may be seen in the Fair every evening. Most of tho young men appear to bo anxious to trap them.

A CARPENTER being asked for a riddle, propounded the following: "I picked it up; I couldn't find it; I put it down, and went along with it." No one could guess. It was a splinter in his foot.

SOME of our lady readers want to know why the fashionable game among the swell gamblers is called "draw poker." Jones says it is because so many of the players burn their fingers by playing at it.

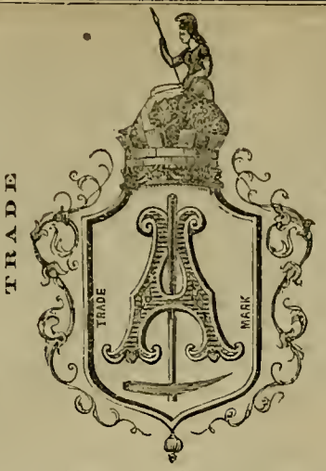
DISTINGUISHED ARRIVALS FROM ABROAD. John Smith, from London; Joe Bowers, from Missouri; Dick Dudgeon, from Arkansas (an Arkansas traveler); and Mr. O. B. Jabers, from Cork, are staying at the Cosmopolitan Hotel.

IF you are a wise man, you will treat the world as the moon treats it. Show it only one side of yourself, seldom show yourself too much at a time, and let what you show be calm, cool and polished. But look at every side of this world.

A CRAZY man having got into the gallery of the United States Senate during a wrangling debate, was taken out, the Sergeant-at-Arms telling him that he was out of place in the gallery. "That's so," said the lunatic; "I ought to be on the floor among the Senators."

A MINIATURE WARDROBE.—Tucker & Co., the jewelers, are making a gold wardrobe for Elise Holt, to hold her dresses when playing at the Alhambra. The affair is about as large as a sailor's "baccy box," but will hold three suits of the little great Blonde's usual theatrical attire.

DURING an examination in history at a young ladies' seminary, one of the pupils was asked: "Did Martin Luther die a natural death?" "No," was the reply, "he was excommunicated by a bull." Another student in astronomy was asked: "What is the milky way?" "The milky way is a collection of white clouds in the sky, called the trade winds or aurora borealis."



New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness with the ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever*; Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever*; Gout, *when the patient is still able to walk*; Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returnod Bottles Bought for Five Cents apiece

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

OCCIDENTAL

Insurance Company,

OF SAN FRANCISCO.

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GOLD COIN.

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Fire and Marine Insurance.

All Losses paid in U. S. Gold Coin.

CHR. CHRISTIANSEN, President
S ROTHSCHILD, Secretary 20v17-3m

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IMPORTERS AND REFINERS

—OF—

Illuminating, Lubricating,

—AND—

PAINT OILS,

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, SOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!

An elegant and complete assortment.

SOLE IMPORTERS OF

Devoe's Illuminating Oil

PATENT CANS.

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Ayer's Cathartic Pills,

For all the purposes of a Laxative Medicine.

Perhaps no one medicine is so universally required by everybody as a cathartic, nor was ever any before so universally adopted into use, in every country and among all classes, as this mild but efficient purgative *Pill*. The obvious reason is, that it is a more reliable and far more effectual remedy than any other. Those who have tried it, know that it cured them; those who have not, know that it cures their neighbors and friends, and all know that what it does once it does always—that it never fails through any fault or neglect of its composition. We have thousands upon thousands of certificates of their remarkable cures of the following complaints, but such cures are known in every neighborhood, and we need not publish them. Adapted to all ages and conditions in all climates; containing neither calomel or any deleterious drug, they may be taken with safety by anybody. Their sugar coating preserves them ever fresh and makes them pleasant to take, while being purely vegetable no harm can arise from their use in any quantity.

They operate by their powerful influence on the internal viscera to purify the blood and stimulate it into healthy action—remove the obstructions of the stomach, bowels, liver, and other organs of the body, restoring their irregular action to health, and by correcting, wherever they exist, such derangements as are the first origin of disease.

Minute directions are given in the wrapper on the box, for the following complaints, which these *Pills* rapidly cure:—

For **Dyspepsia** or **Indigestion, Listlessness, Languor** and **Loss of Appetite**, they should be taken moderately to stimulate the stomach and restore its healthy tone and action.

For **Liver Complaint** and its various symptoms, **Bilious Headache, Sick Headache, Jaundice** or **Green Sickness, Bilious Colic** and **Billous Fevers**, they should be judiciously taken for each case, to correct the diseased action or remove the obstructions which cause it.

For **Dysentery** or **Diarrhœa**, but one mild dose is generally required.

For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins**, they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.

For **Dropsy** and **Dropsical Swellings** they should be taken in large and frequent doses to produce the effect of a drastic purge.

For **Suppression** a large dose should be taken as it produces the desired effect by sympathy.

As a *Dinner Pill*, take one or two *Pills* to promote digestion and relieve the stomach.

An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.

DR. J. C. AYER & CO., Practical Chemists, LOWELL, MASS., U. S. A.

Sold by all druggists and dealers in medicine every where. Crane & Brigham, San Francisco; R. H McDonald & Co., Sacramento, General Agents. 25v18cow4m

REMOVED.

The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. 118, 120 and 122 FRONT STREET, one door from southeast corner of California street.

July 11, 1869. ELAM & HOWES.
4v19-3m

For Miners, Millmen and Metallurgists.

KUSTEL'S NEW WORK,

CONCENTRATION

Of all kinds of Ores, and the

CHLORINATION PROCESS,

For Gold-Bearing Sulphurets, Arsenurets, and Gold and Silver Ores generally.

Price, - - - - $7.50

A liberal discount to the Trade. For sale by the Booksellers Sent to any part of the United States, postage paid, on receipt of the price. Address,

DEWEY & CO., Publishers,

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16v1tf SAN FRANCISCO.

Office of California Powder Works,
San Francisco, July 15, 1869.

NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

JOHN P LOHSE, Secretary.
5v19-3m 314 California street

Mining Secretary.

THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.

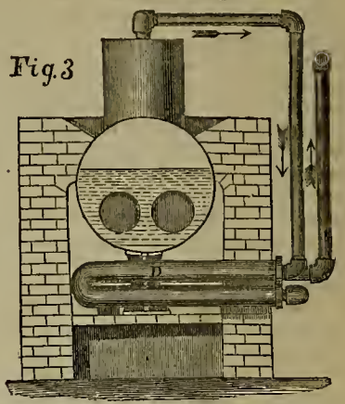
Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.

J. M. BUFFINGTON,
Room 37 New Merchants' Exchange, California street, San Francisco 47v15-tf

Important to every one using Steam for any purpose.

CARVALHO'S

Patent Steam Superheater



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 16, 1869.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after *seven* years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK Co., Boston, May 19, 1866.

"Superheator saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CHECKETT LEATHER CLOTH Co., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our five vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINUOUS OIL REFINING Co., Staghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and wo superheat to 55° deg—an increase of 200 deg."

CAREW MANUF. Co., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly puro and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

"Superheater saves at least 25 per cent in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming."

CONTRA COSTA LAUNDRY, Oakland, July, 1868

"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. Co., Cal., August, 1868.

"Superheater causes a use of 40 lbs. steam instead of 60 lbs.; use much less water, and there is a saving of fuel." (2 sets.)

SIXTH MECHANICS' INST. FAIR, S. F. Sept. 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ton, or 33⅓ per cent. in fuel; engine works better."

And many other letters of the same tenor.

Awarded Silver Medal, Mechanics' Institute, San Francisco, 1868.

Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

Send for Circular to ÆTNA IRON WORKS, San Francisco, California. ROBT. L. HARRIS, Agent.
JOHN L. CONSTABLE, Engineer. 25v18tf

MEUSSDORFFER,

HAT MANUFACTURER

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AT WHOLESALE AND RETAIL.

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72 Front street.....Portland, Oregon

Our wholesale House, 628 Commercial street, extending through to 627 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 23v16-3m

HIBBERD, SANBORN & CO.,

South Point Mills, Berry Street,

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Blanks, Blank Mining Books

Constitution and By-Laws

—FOR—

Mining and Prospecting Companies

Elegantly printed, with care and dispatch, at the office of the

Mining and Scientific Press.

Orders from the interior faithfully attended to.

Committee Appointments at Fairs.

One of the greatest defects in the practical working of Industrial Associations, everywhere, grows out of the appointment and action of committees of awards. There is always more or less complaint and fault-finding at the acts of such committees. This does not arise, as a general thing, from dishonesty or partiality on the part of either the committees, or the appointing powers; but rather from a lack of proper consideration on the part of both. It is quite too often the case that in the haste of making up committees, they are composed of men unfitted to their duties; and again, the committees themselves, when competent, are too apt to be indifferent to the performance of the duties assigned them.

Perhaps it is not too much to say that the greatest amount of permanent good is or might be accomplished by industrial and agricultural exhibitions through the medium of the facts which are or ought to be spread before the world in the published reports of the various committees. Such reports should be elaborate and well considered. It should be the aim of the Managers to place on every committee, at least one individual fully able and *willing* to look carefully into everything of special interest connected with the class or section upon which his committee is to report. Money spent in printing a collection of reports so made, and which shall be calculated to diffuse valuable information among the people, is the best investment a society can make.

The mere "show" made by a society, however good and complete, will not be considered a success in the minds of an intelligent community unless the information alluded to is in some way brought out. This can best be accomplished by a careful and judicious appointment of committees. A society or association which fails to keep these facts in mind, will fall short in the amount of good which the public have a right to expect from them.

The public itself also, has something to do in this matter. The committees alluded to must be made up from their number. It often happens that the best efforts of managers fail from lack of proper coöperation on the part of those who are competent but unwilling to act on committees—or who, after consenting to accept, fail to give that attention to their duty which its importance demands. We trust there will be no hanging back or negligence on the part of the public, in this respect, in connection with the present Exhibition, in San Francisco.

There is one other matter to which we would allude in this connection. Committees often find it extremely difficult to decide upon the merits of articles on which they are expected to report, by reason of the interference of interested parties or the friends of such. When such persons are allowed, unrebuked, to hover around a committee when engaged in the work of examination, or at other times, before their final report is made, despite the most honest efforts at impartiality on the part of such committee, they will allow their judgment to be more or less influenced and warped. Such interference or improper influence should never be allowed. When there is room even for a suspicion of its existence, the moral effect of any award is destroyed, and dissatisfaction is sure to follow.

We are happy to know that the ideas above expressed are fully in accord with those of the managers of the present Exhibition, and that in additions to due diligence and circumspection in the appointment of committees, precaution has also been taken which effectually prevents any collusion on the part of exhibitors or their friends with members of committees. This latter object has been accomplished by a resolution of the Board of Managers, by which all Committees of Award will be unknown to the public until after the awards have been made and reported to the managers. Every gentleman or lady who has received an appointment upon any committee, at the present exhibition, does so on the basis of a mutual agreement to carry out the spirit and intent of the above resolution. The committees have all been appointed, and will work silently and faithfully in the discharge of their duties. The awards will be announced on the last day of the Exhibition.

The Mechanic.

Nothing has done more to add dignity to the standing and calling of the mechanic, than the institution of Industrial Exhibitions. Time was when the only idea associated with mechanical employment was hard hands, a grimmed face and greasy clothing. Of late years, however, ingenious and successful mechanics quite as often acquire wealth as merchants; while renown is far more frequently linked with the names of successful inventors or engineers, than with those who have met with equal pecuniary success in the mercantile walks of life. Time was when the "workshop" was the only place associated in the minds of many with the mechanic; now his name is indissolubly connected with "palaces of industry," which are springing up in every civilized country, and which are visited and examined with wonder and admiration by kings and emperors, and the "high born" of all nations. The wonderful creations of mechanical skill and ingenuity are admired everywhere.

Before the days of Industrial Exhibitions, genius and education had but little to do with mechanic arts. The same plow was made year after year, and century after century. The scythe and sickle were constantly reproduced, without improvement; while the threshing floor, trod by the ox, gave way only to one beaten by the flail. The windmill and the old-fashioned water-wheel, were about the only aids to manual labor. There was but little in the handiwork of the mechanic to admire—nothing new—nothing beautiful outside of architecture. The mechanic himself was a mere machine, never thinking, never improving, never improved.

By and by somebody devised the common school; in it the child was taught to think. Having learned to do so as a child, he continued the practice as a youth and as a man. The mechanic was at once changed from a monotonous, thoughtless machine, to a thinking, contriving being—he became an inventor—a creator. Industry began to prosper. He devised Industrial Associations—local, state, national, and finally International Exhibitions. Mind was thus brought in contact with mind. The inventions of one man were indefinitely multiplied and improved upon by others. Industry was revolutionized; and the mechanics of to-day stand forth, not only as the bone and sinew of the nations, but also as the intellectual directors of their industries, and, to a great extent, as the framers of their political policies.

It is less often now that the lip of proud beauty curls at the name of mechanic, or the pampered child of wealth turns with feelings of scorn from the man whose palm is hardened by useful toil. The politician no longer descants upon his rights, as though it were a favor in him to grant them; he seeks rather to invest himself with a plumage borrowed from the shop, as something which gives weight and influence to his position.

Education has made the mechanic what he is. Education will do yet more for him if he will only improve his opportunities. The mechanic has now his college, as well as the lawyer, the actor, or the divine. Scientific schools are being established everywhere throughout the world, where degrees are conferred, as honorable and ennobling to the student of mechanical science, as to him who finds his specialty in the classics, law, medicine, or divinity.

Armstrong's Patent Heater.

This new apparatus for diffusing a pleasant, moderate heat throughout a room by means of an ordinary coal oil lamp, without in the least interfering with the light of the same, is one of those unique and simple inventions that strike the wants of the people just in the right place. While not pretending to take the place of a stove, it appears just the thing for this climate, when it is only necesary to take "the chill off," to render a room comfortable. The apparatus consists of an outer cylinder, supported on a tripod over the lamp, the top and bottom of which is perforated with a number of air-holes. Within this there is an air-tight funnel-shaped chamber of thin brass, under the mouth of which is placed the top of the lamp chimney, leaving space for draught. The heat of the lamp soon makes the brass intensely hot, and the heated air in the cylinder rising, gives place to the cold air drawn in, which, in turn, becomes heated and rises, thus making a continual current, which forces all the air of the room into contact with the hot metal. The heater may be seen in operation during the Fair, on the right of the fountain, near the office of the FAIR PRESS, and is well worthy of examination.

A CURIOUS CUSTOM.—Nearly all the papers published in the upper portion of this State, have a fashion of stating, when any of their editors come to San Faancisco, that they "have gone below," leading to the inference that this beautiful city by the sea, was a sort of infernal region.

FANNY FERN says: "If one half of the girls knew the previous lives of the men they marry, the list of old maids would be wonderfully increased." Whereupon the Boston *Post* asks: "If the men knew what their future lives were to be, wouldn't it increase the list of old maids still further?"

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To the special merits of your articles on exhibition by advertising them in the Mechanics' Fair Daily Press. The paper has a wide and extensive circulation amongst the most live people of the day, and you and your wares will become known to thousands that would otherwise know you not.

THOSE 300 mahogany logs received from Central America by Hobbs, Gilmore & Co., are finding a ready sale. ***

NOBODY said they would give sight to the blind; yet Muller's Brazilian Pebble Spectacles will certainly improve the seeing of any one who has any eyesight at all left. *

RETURNED.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4in

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Oruit, Lee Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewitz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18 3m

Use Pain Killer for Cholera and Bowel Complaints, for Boil, Cuts, Bruises and Scalds, Old Sores, Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

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New Advertisements.

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Will examine and Report upon AGRICULTURAL LANDS, RANCHES and MINING PROPERTIES, situated in any of the States or Territories west of the Rocky Mountains.

MR. BROWNE intends to devote the autumn and winter months to a personal examination of such properties as may be offered, and proposes to go East with them early in the spring.

His principal aim will be to encourage IMMIGRATION TO THE PACIFIC SLOPE, and to promote the investment of EASTERN CAPITAL in all legitimate enterprises that may be committed to his charge.

Surveys, Maps and Diagrams of Ranches, Mines and other Properties,

Will be made, if required, by HOFFMAN BROTHERS, Civil Engineers, No. 85 Montgomery Block.

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112 and 114 California st., San Francisco.

☞ Agents for Blake's Patent Steam Pump, (warranted the best in the market); Onvis & Furber's Wooden Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustrated Catalogues sent free.

Fire Without Smoke or Sparks.

Of all the thousands of people who have visited the Fair, there is probably not a tithe who have stopped to consider the importance of the fuel used in generating the steam which runs all the machinery in the mammoth building. While almost everybody is aware that the particles of soot which were so numerous and disagreeable at all the provious Fairs, are absent at this ono, few seem to care about finding out the cause of such a great improvement, which arises from using petroleum for fuel, instead of coal or wood. There is no other featuro of tho Fair which possesses so many points of economic importance as this petroleum fuel, which makes a fire without smoke or sparks—an immonso advantago when used by locomotives which pass through ripo grain fields during the summer months.

It is not our purpose to write a laudatory article on this petroleum fuel; what we aim at is to attract general attention to its importance. The consumption of petroleum on this coast, where coal is so dear and wood scarce, is of almost as much importance to manufacturers, as tho introduction of a new and effective motivo power; because it will make the expense of generating steam but a fraction of the present cost of fuel, labor and attention, as the fire feeds itself, and requires no labor.

The material used is the crude petroleum, which exists in exhaustless abundance in thie State. Its combustion is secured by an apparatus, the whole cost of which is only $25, and may be affixed to any boiler now in use at an insignificant expense. The whole secret of the process of converting this useless material into one of the best of fuels, is the adding of superheated steam to the ignited petroleum, which causes the oxygen of the water to combine with the excess of carbon in the fuel, and insures so complete a combustion that smoke or sparks are impossible, while the heat is steady and intense. The prineiple is just as simple as that of the common petroleum lamp used in almost every house, in which the oxygon of the atmosphere is made to combine with the carbon of the coal oil by the aid of the glass chimney, which acts as a reservoir for the two elements—a fact domonstrated by the thick black smoke that rises when the chimney is removed, because there is no opportunity for the elements to combine. In the petroleum furnace the jet of steam serves the same purpose as the glass chimney of the lamp, and insures an equally total combustion of the carbon. We recommend every visitor to the Fair to examine this very important invention, which produces fire without smoke or sparks.

CRAIG'S GLOBE NOZZLE MADE TO WORK. The difficulty in turning the globe in any required direction, when filled with water at a heavy pressure, has hitherto presented an important objection to its general use. This fault, says the Nevada *Gazette*, has now been entirely overcome. The North Bloomfield Gravel company have ordered two globe nozzles of the Messrs Craigs, which are to be cast at the Nevada foundry. These are to he thirty inches in diameter inside, and under a hundred and sixty foot pressuro each will be able to pass from 800 to a 1,000 inches of water through a seven inch nozzle. Marselus & Maltman, have ordered one huge globe for the Manzanita elaims. The amount of water these large ones are capable of discharging under a heavy pressure will be an increase of concentrated hydraulic power beyond anything that has yet been used in deep gravel mining. The Craig brotbers have orders from Nevada and Placer counties for eight more of their thirty inch globes. In one claim at Dutch flat this globe is to he used under 350 inches of water.

THE location and surveys for the East River bridge, at New York, have been made. It will be three years before the towers and cables are completed, and six before the entire work is done.

THE NAME.—Why was tho name of "Kelley's Amerioan Washing Flnid" changed? has freqnently been asked. The artiolo is so good, why ehango the name? Simply this, as has happened before: Two persons, in different localities, are seeking for the same invention at the same time, entirely unknown to each otber, and unaware that any one is striving to accomplish the same purposo. Madame Balcear applied for her patent three weeks prior to Kelley, and snceeeded in getting a patent for the same thing; and the preseut proprietors were obliged to negotiate for the patent which covers the fluid they now manufacture, as at first. Moral to inventors—Hurry up and complete your inventions, as others unknown to you may he on your track.

Get Your Engravings

Made at the office of the MINING AND SCIENTIFIC PRESS in season for printing your circulars for the Mechanics' Institute Fair. Remember, a good engraving cannot usually be made in a day.

Parties who wish first-class wood cuts and electrotypes for illustration in newspapers, pamphlets and trade circulars, should call at once and examine specimens.

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From an endless series of appreciative testimonials and frank acknowledgements, we give the following:

"TIDAL WAVE" OFFICE, SILVER CITY, }
IDAHO TERRITORY, July 27th, 1869. }

MESSRS. DEWEY & CO.—GENTLEMEN:—Allow me to express my high appreciation of the ability and business management of the Mining and Scientific Press Patent Agency, and to say that our business relations have been marked with the utmost promptitude upon your part and with entire satisfaction upon mine.

Yours, etc., JNO. S. BUTLER.

MARYSVILLE, CAL., August 13th, 1869.

MESSRS. DEWEY & CO.—GENTS:—Enclosed find $20 (currency) for last fees on patent for gang plow. I am very much surprised, after opinions received from Munn & Co. I am, respectfully, yours, F. A. H.

The original of the above letter (and many others with similar reference to other agencies) can be seen at this office, in cases for which we have secured patents for inventors who had been denied patents, or who had paid for being told that they could not obtain patents. Inventors on the Pacific coast are fast learning to patronize first-class home agents, who better understand their cases and will give more thorough attention to every invention entrusted to their keeping.

DEWEY & CO.,
U. S. and Foreign Patent Agents.

SOMERSVILLE, CAL., August 25th, 1869.

MESSRS. DEWEY & CO.—Dear Sirs: Allow me to return you my thanks for the very able manner in which you have conducted the business entrusted to your care. You will please forward the document (British Patent) by Bamber's Express to this place. Yours, respectfully,
GEO. HAWKHURST.

JAMESTOWN, Cal., July 6th, 1869.

MESSRS. DEWEY & CO.—GENTLEMEN:—The Patent for our Ore Washer and Concentrator was duly received by express. We return you our thanks for the promptness and successful manner which have attended your efforts in our behalf. Yours, WM. G. HESLEP.

SUISUN CITY, Cal., June 26, 1869.

MESSRS. DEWEY & CO:—This is the third time you have presented me with Letters Patent within twelve months. Gentlemen, you have done all I have asked of you—you have been honest; you are men that an inventor can rely upon for doing business for him, and he need not fear of being swindled or wronged in any way. I would give you business to do in your various departments in preference to any one else. Many thanks to you for your success. You have obtained valuable patents for me, and I appreciate your kindness, your honesty, ability and success. Yours, RICHARD KNOTT.

THE RIGHT STAMP!—One of our wide-awake California inventors (who has already received two patents through this office) evinces the true winning spirit in the following note:

SAN JOSE, Cal., June 29, 1869.

MESSRS. DEWEY & CO:—A few days ago I received your letter apprising me of the rejection of my case, etc. Well, under the circumstances, I will just say, "*Let 'er rip!*" and I will remember the indefatigable Zack. Taylor's advice to his soldiers—"Pick your flint and try it again." I will have to try and get even on something else. I am satisfied you have done your duty as agents. Yours, J. F. C.

New Mining Advertisements.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of September, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep25

Eveolng Star, No. 1, Silver Mining Company. Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of August, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the fifteenth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. au28

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Saturday, the second day of October, 1869, and the sale thereof until Friday, the twenty-second day of October, 1869. By order of the Board of Trustees.

se25 WM. H. WATSON, Secretary.

Rippon Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of September, 1869, an assessment of twenty-five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, N. E. corner of Fifth and Howard streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twentieth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. F. BERNARD, Secretary pro tem.

Office, northeast corner Fifth and Howard streets, San Francisco, California. se25

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	8	268	bal 78 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 6 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	10	1268	bal 127 75
J H H Williams	69	979	bal 92 21
J H H Williams	70	20	bal 1 89
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10	bal 1 00
W H Kelln	43	5	1 50
Otis V Sawyer	45	20	6 01
Otis V Sawyer	46	20	6 00
Thomas Houseworth	58	500	bal 50 00
Thomas Houseworth	60	18	5 40
R G S McDonough	48	100	bal 10 00
George S Hong	42	20	6 00
George S Hong	44	10	3 00
George B Merrill	59	60	bal 63 00
J O Littlefield	61	630	bal 63 00
J & Littlefield	62	9	bal 90
George H Russell	66	20	bal 4 44
George H Russell	67	10	bal 2 22
George H Russell	68	10	bal 2 12
George H Russell	64	600	bal 133 12
S M Smith	74	700	bal 20 08
Samuel D Meyer	75	50	15 00
George B Merrill, Trustee	63	671	189 30
Otis V Sawyer	71	1200	bal 113 24
Otis V Sawyer	72	38	bal 3 56

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439, California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. se25

Notice.—The adjourned Annual Meeting of the Stockholders of the WASHTELLO MINING COMPANY will be held on MONDAY, October 18th, 1869, at the office of J. F. Hubbard, Esq., Room No. 3, Hayward's Building, California street, at 8 o'clock P. M.

DANIEL McLEOD, Secretary.

San Francisco, Sept. 21, 1869. se25 2w

Mining Notices--Continued.

Glenwood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 418 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 418 California street, San Francisco. je12

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Wednesday, the sixth day of October, 1869, and the sale thereof until Tuesday, the twenty sixth day of October, 1869. By order of the Board of Trustees.

sep11 O. D. SQUIRE, Secretary.

Hamilton Hydraulic Tunnel and Mining Company, White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Chas. H Latson	no cert	800	$400 00
Edw Heathcote	no cert	800	400 00
Hiram Ross Kraus	no cert	800	400 00

And in accordance with law, and an order of the Board of Trustees, made on the tenth day of August, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, on the twenty-seventh day of September, 1869, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep11

Kinnld Flnt Mining Company, Tuolumne County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the fourth (4th) day of August, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
— Colburn	77	10	$25 00
— Colburn	80	10	25 00
James Nelsen	81	10	25 00
James Nelson	82	10	25 00
I P Rankin	83	10	25 00
I P Rankin	84	10	25 00
I P Rankin	85	5	12 50
Wm H Sharp	86	10	25 00
Wm H Sharp	86	10	25 00
E S Tibbey	29	10	25 00
E S Tibbey	30	10	25 00
F Vassault	55	10	25 00
F Vassault	56	10	25 00
F Vassault	57	10	25 00
F Vassault	58	10	25 00
F Vassault	59	10	25 00
John Walker	78	10	25 00
John Walker	79	10	25 00

And in accordance with law, and an order of the Board of Trustees, made on the fourth (4th) day of August, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Messrs. S. L. Jones & Co., auctioneers, 207 and 209 California street, on Saturday, the twenty fifth day of September, 1869, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. H. CROWE, Secretary.

Office, 220 Clay street, San Francisco, Cal. se11

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of September, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 408 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINCARN, Secretary.

Office, 408 California street, San Francisco. se11

Siempre Viva Silver Mining Company, District of Zaragoza, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of September, 1869, an assessment of one dollar and fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 314 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.

Office, 314 California street, Up stairs, San Francisco, California se11

Silver Wave Mining Company.—Location of Works; White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-eighth day of August, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the twenty eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. se4

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of August, A. D. 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 520 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

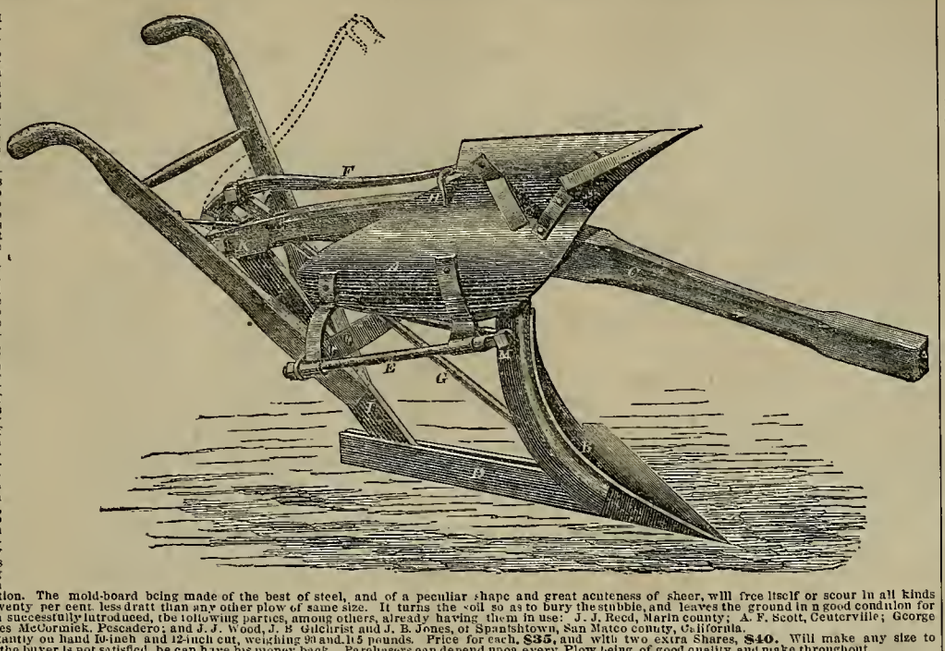
SAM'L S. MURPEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. au28

WHERE TO ADVERTISE.—The attention of traders and mill machinists is called to the fact that the *Mountain Messenger*, of Downieville, Sierra County, possesses many special advantages as an advertising medium over a majority of the interior press, it being the only public journal published within a radius of sixty miles, in the richest and most populous mining sections of the State. Its weekly edition is double the average of country papers, being without the range of large dailies, and having no competition at home. Its local columns afford many items for our city cotemporaries, while its rates of advertising are reasonably low jly17tf

Postage.—The postage on the MINING AND SCIENTIFIC PRESS to any portion of the United States is twenty cents per annum, or five cents per quarter, payable in advance at the Post Office delivering the paper. Postage free in the city and county. Foreign postage (with few exceptions) two cents per copy, prepaid. To Bremen and the German States (marked via Bremen and Hamburg line), three cents per copy, prepaid. Single copies to any address in the United States, two cents.

SCOVILLE'S CLIMAX SIDE-HILL PLOW.



The advantages claimed for this new Patent Californian Plow over others employed for similar work, consist in its being so constructed that the plow which is not in use is thrown up in such a manner as to rest its weight upon the beam, as shown in the engraving, where the plow, A, is firmly held by the hooks upon the end of the iron arm, F. The weight of the upturned plow is thus made to aid in keeping the opposite plow to its work in the ground, while the balance of weight is so equally divided as not to give an excess on one side. Its position is also such that it does not in any way interfere with the plowing, and the person who holds the plow can see to handle it as readily as though the mold-board was not resting upon the beam. The handles are so arranged as to give to the holder a sure and easy control of the plow. The rod, G, is operated by the arm or lever, F, so as to lock the plow to be used in its proper position in the standard, by entering a slot in the toe of the land-side, D. When it is desirable to use a single plow (as on level ground) either of the mold-boards may be quickly removed by loosening the nut, M, and removing the rod, E, thus converting it into a single plow. The mold boards are hung upon two angularly placed axles, one of which belonging to the plow not in use is shown at E, with its mode of attachment to the axis. The plow may also be used double, as for ditching, etc., by slipping a cap over the joint of both plows when in proper position. The mold-board being made of the best of steel, and of a peculiar shape and great acuteness of sheer, will free itself or scour in all kinds of soil, and requires fully twenty per cent. less draft than any other plow of same size. It turns the soil so as to bury the stubble, and leaves the ground in a good condition for seeding. This Plow has been successfully introduced, the following parties, among others, already having them in use: J. J. Reed, Marin county; A. F. Scott, Centerville; George W. Sbade, Watsonville; James McCormick, Pescadero; and J. J. Wood, J. B Gilchrist and J. B. Jones, of Spanishtown, San Mateo county, California.

TWO SIZES kept constantly on hand 10-inch and 12-inch cut, weighing 90 and 105 pounds. Price for each, **$35**, and with two extra Shares, **$40**. Will make any size to order. If, after a fair trial, the buyer is not satisfied, he can have his money back. Purchasers can depend upon every Plow being of good quality and make throughout.

DORMAN, WOLF & CO., Sole Agents for this Coast,

9v19 2mw-1am **99 CLAY STREET, CORNER DRUMM. SAN FRANCISCO, CAL.**

Machinists and Foundries.

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of

Stntionary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

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UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

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BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

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Pioneer Screen Works.

JOHN W. QUICK,

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Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

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Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tebama and Fremont streets, above Howard street, San Francisco. 3-qy

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Iron and Metal Importing Company

Nos. 25 and 27 Fremont street,

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Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE. Manage.

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Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

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Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,

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Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

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IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.

Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States. 1v17tf

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DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

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NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

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AGENTS FOR

Thomas Firth & Sons' Cast Steel,

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

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CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

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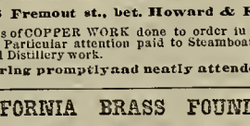
All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17 qy **J. WEICHHART, Proprietor.**



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226 Fremont st., bet. Howard & Folsom.

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to. 13v11

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

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Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

(including High and Low Mortars, for wet or dry crushing) Furnace Irons for Roasting Ores; Freiberg Barrels, Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

CALIFORNIA FILE MF'G CO.

No. 437 Brannan Street,

Between Third and Fourth, San Francisco.

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NEW FILES OF EVERY DESCRIPTION

ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19 qy

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LIGHT AND HEAVY CASTINGS,

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Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order. 10v18qr

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QUARTZ OPERATOR'S HAND-BOOK.

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A cheap and handy book for Quartz Prospectors, Millmen, and Amateur Assayers.

This little work, of 139 pages, although partly devoted to a discussion of limited interest to general readers, contains instructions in the WORKING AND ASSAYING OF ORES, AND TABLES FOR REFERENCE, which renders it quite desirable and of frequent service.

Price, $1, coin—$1 30 in currency or postage stamps. For sale by **DEWEY & CO.,**

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Price, 25 cents, Postage Paid.

A PAMPHLET,

JUST PUBLISHED ON THE

TREATMENT OF REBELLIOUS

SILVER ORES

—BY—

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Assayer and Metallurgical Chemist.

This Pamphlet contains 8 pages of concisely written matter, by a practical working Metallurgist.

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Mechanical Wonders—Their Simplicity.

[From the Mechanics' Fair Daily Press, of Sept. 20th.]

We no longer consider steam as a substitute for muscle wonderful, but we are not sufficiently aware of the extremely simple method of its operation. One of the best examples of the beauty and efficacy of inventions that could be referred to in the Fair, may be seen in working condition this evening at the place in the machinery department occupied jointly by A. Williams with his Douglass Brick Machine, and E. Squires, with his little one-horse power engine, driving the former. Squires is an apprentice in the Vulcan Foundry; he made his entire machine out of work hours, and it is a bona fide one-horse engine that will do more work than any one horse can do. The brick machine takes the raw clay, pulverizes it dry, and makes from 20,000 to 40,000 pressed brick out of it in a day, the work, if we remember rightly, of about forty men. Squire's machine is for sale at $125, a very moderate price.

CHEAP GAS.—Among the various inventions for saving expenses, on exhibition at the Fair, the apparatus for making gas with sulphuric acid deserves special attention. The apparatus which generates the gas used by Root & Nye's superb collection of lamps and gaseliers, in the Music Hall affords a clear illustration of the compactness and simplicity of the arrangement. An apparatus not much larger than an ordinary water-pail being sufficient to furnish gas for lighting every room in a three-story building. The gas is generated by the action of sulphuric acid on iron filings, and can be made by any person at a cost not exceeding $2 per thousand cubic feet. Such an invention is of great importance to this State, where gas is so costly.

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setlers for themselves, at the office, **229** Fremont street,

1v1 San Francisco.

The Excelsior Force Pump.

For all Purposes the Best.

ALL PUMPS WARRANTED.

BRITTAN, HOLBROOK & CO.,

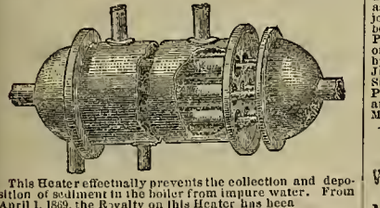
AGENTS,

111 and 113 California St.,

SAN FRANCISCO.

9v19-2m

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

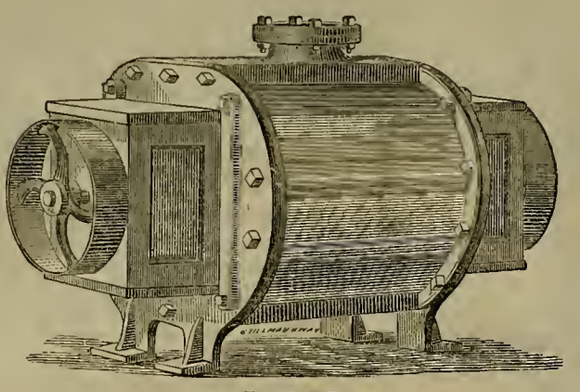
WM. B. CROSS,
16v18-3m Patentee, Sacramento, Cal.

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

MANUFACTURED BY KEEP & BARGION,

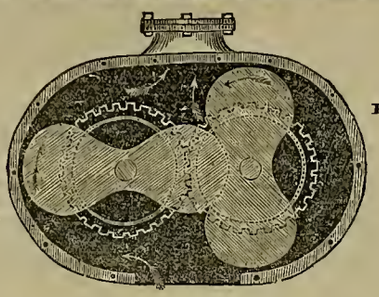
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition.



Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER **Than any Blower** Now in use.

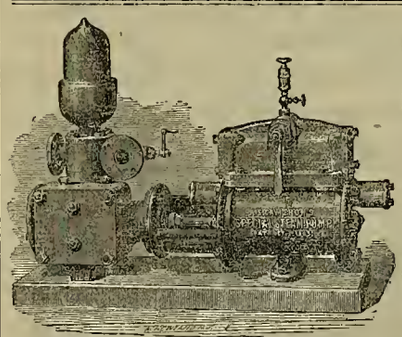
One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,
4v16-3m **Globe Iron Works, Stockton, Cal.**



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Engine Regulators.
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INJECTORS.
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114 BEALE STREET.

The Most Important Invention of the Day.

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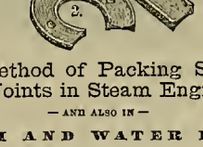

New Method of Packing Stationary Joints in Steam Engines,

—AND ALSO IN—

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

Notice to Miners,

Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,
8v13-1y Stove Store, No. 1 Clay street, below Davis.

REBELLIOUS ORES.

THE HAGAN FURNACE.

The above method for the purification of Rebellious Ores is respectfully offered to the public. Repeated actual workings show that the

HAGAN FURNACE

Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

It has never been claimed for it that it will extract gold from ores which do not contain any of that metal.

Parties owning rich but refractory veins, can treat with the undersigned upon the basis of

GUARANTEED RESULTS,

With responsible security. For an interview, and all desired particulars, address

THE PACIFIC ORE CO.,
P. O. Box **1019,** San Francisco.
June 25 1869. 29v18-3m

THE RISDON
Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

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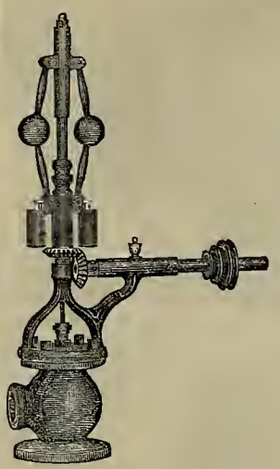

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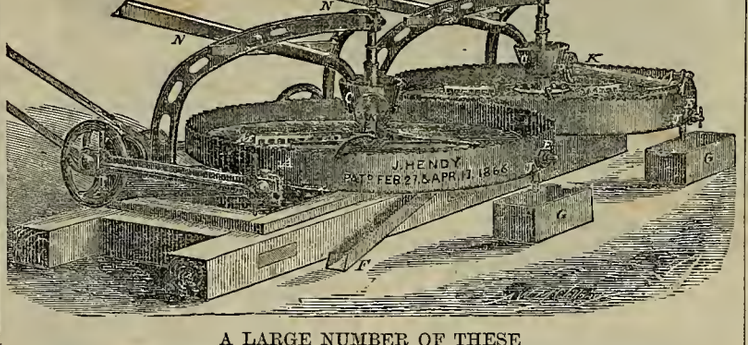

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Respectfully yours, J. H. CROSSMAN, Supt. N. S. Mine.

J. HENDY, Patentee.
Office at Union Iron Works.

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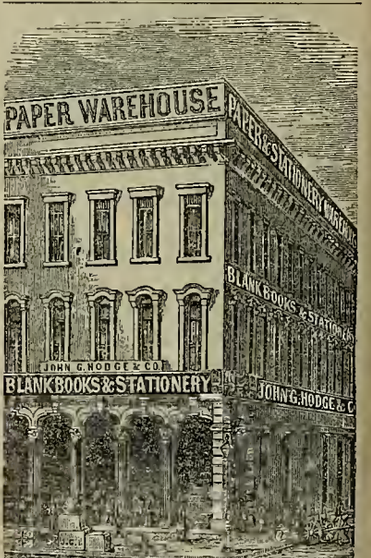

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, OCTOBER 2, 1869. VOLUME XIX. Number 14.

Improved Sewing Machine Needles.

We give herewith illustrations of several alleged improvements which have been introduced into the manufacture of sewing machine needles, having for their object the provision of a more ready manner of threading the needles than by the ordinary way of pointing the thread and poking it through the eye—a slow, tedious operation, and extremely difficult except in a very strong light and with very good eye sight. The first improvement in this direction was patented by Mr. A. J. Ambler, of Chicago, Illinois, March 24, 1863. The eye of this needle is provided with a lateral slot, so beveled as to facilitate the entrance of the thread and prevent its escape, while at the same time no impediment is supposed to be offered to the use of the needle in sewing. Fig. 1 gives a representation, copied from the United States official patent reports, of the manner in which this needle and eye is made. The slot, it will be seen, opens into the eye at right angles with the length of the same.

Fig. 1. *Fig.* 2. *Fig.* 3.

The next patent, in this direction, was issued on the 14th of September last, to Mrs. Hannah G. Suplee, of this city. The manner in which *this* slot is opened into the eye is shown in figure 2. Instead of opening directly at right angles, it is made to pass diagonally upward, as shown. This is drawn by our engraver from the needle itself, and represents the instrument as at present constructed; but there is still another form, slightly varying from this, which is said to be the actual Suplee patent. The claim, which is for the combination of parts, reads as follows:

"I claim the within-described needle for sewing machines, having a slot or opening, *A*, from the eye, with points *c* and *d* and projection *b*, substantially as and for the purpose set forth."

The next improvement is represented by figure 3, and is the invention of Mr. John L. Boone, of this city. The manner of construction and mode of threading this needle is very distinctly shown in the engraving—the thread being inserted by springing the point, as shown, so as to open a split which communicates with the eye, and which closes immediately after the thread has entered.

The split on the side extends from below the eye to some distance above the eye, and when threaded, the finger thus formed presses against the body of the needle as a spring, imparting strength and forcing the point of the finger in, so as to avoid any liability to catch in the fabric while passing through.

It appears to have decided advantages over either of its predecessors—especially as regards strength and the facility with which it can be made to pass through the most delicate fabric. Application for letters patent for this invention has been made at Washington, and foreign patents are being secured by the inventor.

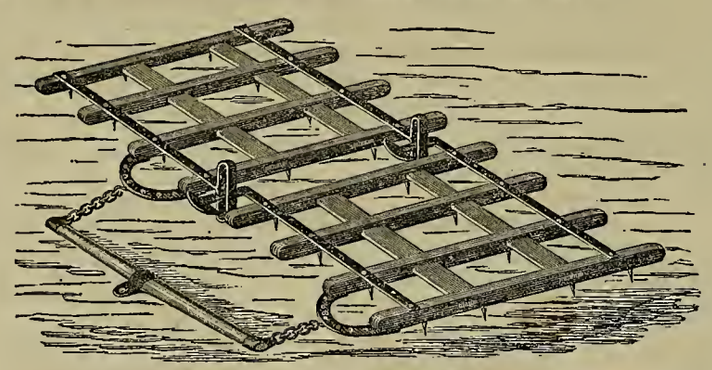
TALKED ABOUT.—It is found not so easy to start a grand Pacific Ocean excursion—to Mexican and Hawaiian ports—as it is to get thousands to pronounce themselves enthusiastically in favor of the idea. But now is the time to make it known if persons really desire to go; for the interest as well as possible pecuniary advantage belonging to a pretty thorough canvassing of the resources and the actual status of the western States of Mexico, and of the fertile tropical slopes of the Sandwich Islands, are apparent. The North Pacific Transportation Company have had a proposition for such an excursion under consideration, but thus far without having fully determined in regard to it. Probably it will fall through, as excursions are apt to do. But a wholesale visiting to those shores by energetic and wide-awake Californians, would be a godsend to the countries named, and could not fail to be a satisfactory trip to the individuals.

CLASSIFICATION.—The following is the very simple system of classification adopted by the American Institute: 1, Arts and Education; 2, Department of the Dwelling; 3, Trades and Handicraft; 4, Chemistry, Mineralogy, Mining; 5, Engines, Machinery; 6, Intercommunication; 7, Agriculture. These subdivisions are meant to include everything that *is*. The Paris Exposition had 100 classes, in groups. Our own classification this year into 21 subdivisions, is comprehensive and excellent.

S. H. H., will please send us word where we can address a letter to him.

Brown's Challenge Harrow.

We give herewith a pictorial representation of an improved harrow recently patented through the MINING AND SCIENTIFIC PRESS PATENT AGENCY, by Messrs. T. A. and T. S. Brown, of Brooklyn, Alameda County. This harrow is of that class called double harrows, which consists of two harrows joined together so as to form one, and its novelty and improvement consists in the manner of uniting the two. Harrows are made double, with flexible joints, so as to permit a more independent movement, each of the other, and to allow them to more freely accommodate themselves to the inequalities of the ground over which they pass. The difficulty heretofore encountered has been to devise a proper connection between the two harrows, so that each would perform effective work. That object appears to have been fully accomplished in the device herewith presented.



T. A. & T. S. BROWN'S CHALLENGE HARROW.

Referring to the engraving, it will be seen that iron bars run across each of the harrows, at the front and rear. The bars upon both harrows project and overhang upon their inner sides. The overhang of the bars upon the "near" harrow, consists of an elbow with a cross head. The overhang of those upon the "off" harrow are made to form a loop. When the harrows are to be connected, they are placed at right angles to each other, when the heads of the one may be easily entered within the loops of the other. When the harrows are so joined and placed in position for work, as here shown, they cannot be separated. It will readily be seen that by this device, while a firm union is effected, each harrow is allowed an independent motion back and forth on the ground, equally to the length of the loop; thus greatly facilitating the process of harrowing, by allowing each harrow to accommodate itself to the unevenness of the ground, thus effecting a more thorough pulverization of the soil than could be effected by a single rigid harrow. These harrows have been in use in Alameda County during the last season, giving the fullest and most unqualified satisfaction. State, county and farm rights for sale. All letters for information should be addressed to Messrs. T. A. and T. S. Brown, Brooklyn, Alameda County, Cal.

Shipping Ores to Europe.

Along the line of the railroad since its opening, quite a business has sprung up in the way of shipping ores to Europe. So extensively is this being entered into, that it is thought our exports in this line, will exceed that of any previous year.

Any feature which tends to give life to the mining interest, is certainly acceptable and to be encouraged; at the same time we regard this shipping of gold and silver ores to Europe, as quite a reflection upon ourselves.

We boast of our metallurgical skill and twenty years' experience, with facts such as this staring us in the face. Now if we have so much skill and so much experience, why not work these ores at home? Labor expenses cannot be set up as the reason; since freight, with discounts, sampling and assay charges, per ton, in every instance, exceed the difference in the cost of labor.

The great point to be obtained in all our industries, is to keep our gold and silver at home. By working these ores here, we make the first important step towards it, besides giving employment to large numbers of our own people.

If our systems are imperfect, then let us remedy the defects. That such ores are worked successfully in Europe is a settled fact; and to say by these shipments we cannot work them, is admitting more than, in justice to ourselves, we desire to see.

We do not wish to be understood as throwing any discouragement upon shipping, if it pays best to do so; but we certainly desire to see our miners exert themselves to do away with this necessity, by making it *more* profitable to work these ores here,—especially those of gold and silver, and perhaps copper as well.

The number of skilled metallurgists among us who have had European experience, if you please, as well as our own native workers, warrants us in saying, that we can work our own ores if we will only set about it judiciously and in earnest. As before observed, our prosperity consists in giving employment to our own people, and in keeping our gold and silver at home. Let us apply this principle to our ores as well as to other things.

REPORTS OF THE AMERICAN INSTITUTE. The American Institute sends out every year fifteen thousand copies of a volume of thirteen hundred pages, consisting of papers read and oral statements made at the meetings of that body. Accessible printed matter containing such figures and details as cannot be retained in the memory, is of the greatest importance to engineers, and even to farmers and others who undertake to do thoroughly whatever they may have in hand. The American Institute Reports constitute, besides, a complete library of American science and discovery.

Mechanical Progress.

Aero-Steam Engines.

Mr. George Warsop's combined steam and air engine is attracting a good deal of attention in England. *Engineering* notices it at length; and we take from that journal the following detached portions of an editorial upon the subject:

"Briefly stated, Mr. Warsop's plan consists in fitting an engine with an air-compressing pump, this pump forcing ordinary atmospheric air through a coiled pipe, which is exposed to the action of the exhaust steam and to the hot gases in the boiler flues, and from which it is finally delivered into the lower part of the boiler, and allowed to pass up through the water and mix with the steam in the steam space. We may premise that, although results show that a very decided economy has attended the application of the combined air and steam system to the engine on which the experiments have been made, yet we do not believe that an equal economy is likely to be obtained by the application of the system to engines of better construction. That the system, however, gives promise of a degree of economy quite sufficient to entitle it to the careful consideration of engineers, the experiments already made clearly show. So far as the experiments yet made enable us to judge, the beneficial results obtained under the combined system of working are due to four causes, namely: first, to the air acting as a heat-carrier from the exhaust steam and waste gases into the boiler; secondly, to its promoting circulation in the boiler; thirdly, to its, to some extent, checking condensation in the cylinder and steam passages; and, fourthly, to the fact of air forming a more economical motive fluid than steam. Now in the case of engines supplied with steam at, say 110 or 120 lb. per square inch, and fitted up on Mr. Warsop's principle, the heat generated by the compression of the air would be so great that the temperature of the latter would be raised not only above that of the exhaust steam, but also above that of the waste gases in the boiler flues; and it would thus be rendered incapable of acting as a heat-carrier. Again, in proportion as the cylinder and passages are protected by steam-jacketing, careful cleaning, etc., the value of the air as a preventive of condensation decreases, and in the same way its value as a promoter of circulation in the boiler becomes of less value in proportion as the boiler is of good construction. We now come to the fourth source of economy, namely, the efficiency of the air as a motive fluid, and here we again find that high pressure and high degrees of expansion are inimical to the success of Mr. Warsop's plans."

Electric Communication between Railway Passenger and Guard.—Mr. S. A. Varley read a paper before the British Association at Exeter, Eng., describing a system of signalling on rail-cars in use on the North-Western Railway. *Engineering* gives an abstract of this paper. We quote: "An insulated wire ran along under the carriages which communicated with a battery in the guard's van, and another on the engine. Two insulated wires from each compartment were connected with the one under the carriages, and these were attached to a handle in each compartment. This handle, on being pulled out (and which would not again go back without a key), set the electric apparatus in motion, striking a bell in the guard's van and on the engine, which would not stop ringing until the handle pulled by the passenger raising the alarm was put back in its place by the guard in possession of the key for that purpose. The insulated wire running under the carriages was in reality seven wires in one coil, which were covered with a flexible material, and not likely to break on going round curves. No electric knowledge was necessary in testing the system, as all the operations are purely mechanical. The batteries continue to work two or three months without attention, and warning of any failing is given by the fainter working of the bell."

To Fasten Leather to Metal.—A. M. Fuchs, of Bairére, steeps the leather in an infusion of gall nuts; and a layer of hot glue being spread upon the metal, the fleshy side of the leather is forcibly applied to it. It must dry under pressure. The leather will be torn sooner than separate from the metal.

Repairing Castings by "Burning On." The *American Artisan* says it is surprising that this plan is not more generally understood and oftener resorted to. It is in many cases perfectly efficient. We quote: "With large castings, the portion to be repaired is first heated until it approaches the melting point. The surface should then be coated with a borax flux, and molten metal directed in contact with it until the melting of the surface is well under way, which can be ascertained by probing with an iron rod. The mold of the part to be added being properly arranged, the molten metal is caused to flow into it, being at the same time in contact with the melting surface of the casting. When the whole has become cool, provided the operation has been carried on with the requisite care, the new portion will be found homogeneously united to the original casting."

The "Celeremane."—*Engineering* for September 3d describes and illustrates a new vehicle with the above name. It is a sort of velocipede carriage worked by four men, who sit and pull like rowers. The steering is done by a coxswain at the stern, who has an elevated seat like a coachman's, and handles a pair of ordinary leather reins attached to the forward axle,—one near each wheel. The rear wheels are the drivers; a steel cross-bar on the outside serves as the crank, from which a connecting rod leads to the frame worked by the rowers. A speed of twelve miles an hour is easily kept up.

A French Revolution in Steel-Making.—The Paris *Presse* notes an experiment made by M. Berard, an engineer, in presence of two eminent scientific gentlemen. The account closes thus: "The product obtained by his process, proved to be steel of good quality. The operation was effected in a reverberatory furnace, lasted about an hour and a half, and was accomplished with as much facility as puddling. In this process, from 6,600 to 11,000 pounds of metal is made by one operation into steel ingots ready for the workshop. We will be much deceived if this invention has not in it the germ of a complete revolution in metallurgy."

Percussion Caps.—"The shells are taken, quarts at a time, and shaken upon a long steel plate, perforated with little holes, each of which receives one cap; then a handy little machine deposits a single drop of varnish at the very bottom of each; then fulminate of mercury is placed on the plate and swept with a soft brush very carefully into the shells, which are next dropped into tubes, all right side up, and finally subjected to the action of another machine, which rams down the charge in each cap."—*Artisan.*

Novel Blasting.—The Oswego, N. Y. *Times* describes an experiment lately made in that city in the way of blasting by means of gas. "An excavation was being made for a tank at the gas works. An old well had been pumped out and filled up, leaving an open space at the bottom. Into this space gas was introduced, sufficient to make an explosive compound with the air. This was touched off by a match trigger, when a general upheaving of the earth took place, loosening up the soil and making digging easy."

New Roofing Tiles.—Tiles of galvanized iron, each fastened by a single nail of the same material, with a leaden washer, and thin, so that they can be easily cut to fit corners, etc., have been introduced in France.

Railroad Frogs.—Armstrong & Co.,—says an English exchange,—have patented a frog composed of a cast-iron bed plate with a working face of cast-steel. This steel facing is not riveted or bolted on, but in the process of manufacture the two metals are incorporated, and the frog is complete in one casting.

Scientific Progress.

The Solar Corona.

Prof. Young, of Dartmouth College, whose happy determination of first contact, in the late eclipse, by means of the spectrum of one of the solar prominences, we made reference to in our last issue, gave special attention also to the observation of the corona. In a letter to Prof. Morton, after his return from Burlington, Iowa, the place of observation, he says: "Perhaps I am too bold in my conclusions, but at present I feel persuaded that the solar corona is a permanent aurora." This conclusion was based upon the correspondence of his principal corona lines with certain aurora lines of Huggins. Prof. Morton refers to this in an interesting article published in the *Journal of the Franklin Institute*, for September, giving, in anticipation of the official publication, the results of the observations made by the Philadelphia Photographic Expedition, of which he had charge; and after noting other significant points in the same connection, adds: "It would thus seem almost certain that the corona is simply an electric discharge, no doubt varying with great rapidity, as we see in the case of the aurora; and to its variations we may attribute those apparent motions of the prominences which have been observed by so many, but which our large series of photographs shows not to have had any actual existence."

Descent of Glaciers by Gravitation. In opposition to the position taken by Mr. Moseley, James Croll, of the Scotch Geological Survey, supports the theory that gravitation alone is sufficient to account for the descent of glaciers. "Each molecule descends step by step as it melts and solidifies, and hence the glacier, considered as a mass, is in a state of constant motion downward." Upon this theory, he considers the origin of crevasses perfectly explicable; as also the fact that glaciers move more rapidly in summer than in winter. As for the denuding power of a glacier, it depends not upon the ice, but upon the stones and sand forced along under it; and the grinding effect of a glacier descending with a given velocity must be the same whether its motion be molecular, or of the kind generally supposed."

Dr. Hayes Among the Icebergs.—A letter from William Bradford, the artist of the expedition, dated Ivigtut, Greenland, July 27th, describes the *Eisblinken*, one of the largest of the glaciers, which is constantly discharging immense icebergs into the sea, the whole shore of which is lined with them. He says: "The sea is dotted with these great white floating islands, which are often from one to three hundred feet high. In a single view I have seen many hundreds. We were fortunate enough to witness seven bergs discharge in the manner first described, I believe, by Dr. Hayes; and although we were at one time exposed to some danger, and lost a part of our photographic materials by the wave which rolled thirty feet high upon the rocks, yet all of the party escaped without personal accident. The photographic party heard the crash and saw the wave coming in time to climb the rocks, and thus escape being washed into the sea, meeting with no further mishap than a good ducking from the crest of the sea. It was a narrow and providential escape. I was on the vessel at the time, making a study in oil of the glacier front, which is two hundred feet high, and had we been nearer to the shore, we should have been in all probability, dashed to pieces."

Father Secchi on Electricity.—"I believe that the true theory of electricity will result from the principle that electricity is not a motion *(mouvement)*, but a change of the quantitative and dynamic equilibrium of the ether which constitutes the atoms of the substances, and that the propagation of such a change is brought about by the moving of the ether from one atom to another; this motion shakes, disturbs the ether of the atoms, and thus produces heat."

The Alabama Meteorite.

Prof. Brush gives in *Silliman's Journal* for September, the description of the aërolite which fell last December in Franklin County, Alabama, and which has been sent him for examination. It was seen to fall by Mr. James Hooper, who picked it up while still warm. It weighs 1 lb. 9½ oz. A representation of it is given, drawn half the size of the stone. The result of the analysis is given. Prof. B. closes this with these words: "From this composition it would appear that the mass is probably made up of uni- and bi-silicates. In a preliminary analysis I found that more lime was contained in the acid solution than in the portion undecomposed by acid, while with the magnesia the larger amount remained in the insoluble residue. The silicate decomposed by acids containing lime is most probably either anorthite, labradorite or a lime-olivine. The large portion of magnesia and iron insoluble in acid indicates the presence of a pyroxenic mineral. Further investigation is needed to fully establish the specific character of the constituent minerals of this meteorite, although we are justified in concluding that it contains an olivine, a pyroxenic mineral and a feldspar, besides chromite, troilite and a very small amount of nickeliferous iron. I think by sacrificing a large portion of this stone that its constituent minerals could be mechanically separated from each other by careful selection with the aid of a magnifier, and their specific characters accurately determined by analysis. At present I do not feel at liberty to undertake this, but hope at some future time to return to the study of this problem."

Arborescent Marks Produced by Lightning.—Dr. Richardson, in his experiments with the great induction coil, at the London Polytechnic Institution, found that arborescent marks may be produced on the bodies of persons struck by lightning—a fact which has been discredited by scientists. The popular opinion in regard to these marks has been that they were the images of trees photographed upon the skin by electrical agency. The experiments of Dr. Richardson confirm the production of the marks, but show that, instead of being images of trees or plants, they are the superficial tracings of blood vessels, which the electric current has followed on account of their greater conductivity.

For Photographers.—Professor Morren calls the attention of photographers to the property of intercepting the chemical rays without stopping the luminous ones, which is possessed by a screen of bisulphate of quinine well filtered and confined by means of gutta-percha between two glass plates. This screen is five millimetres in thickness. It is very much to be preferred to the yellow glass, which gives everything such peculiar colors as to require a special training of the eye in order to properly note the reactions.

Regeneration of Limbs.—M. Milne-Edwards has communicated to the French Academy some experiments on this subject. It had been shown that the amputated limb of a newt would be renewed if the scapula be not removed. The new experiments were upon fishes. If the part corresponding to the scapula be removed, it was found that no reproduction would take place. Otherwise, however, the fin would grow again.

Transit of Venus in 1874.—The French astronomer Royal has already fixed upon the stations for observation. They are Oahu, (Sandwich Islands), Kergnelen Island (in the Indian Ocean), Rodriguez (a dependency of the Mauritius), Auckland (New Zealand), and Alexandria.

Insulation of the Cable.—The insulation of the Brest and St. Pierre cable is already more than double, by measurement, what it was when first laid. The improvement is believed to be mainly due to the diminished temperature.

Slate Quarries as an Investment.

The present, and the first public exhibition in this State of the products of our slate quarries, (by Mr. Robinson, of the California Slate Company, whose quarry is in Copperopolis) is eminently suggestive of what this new business may in time become. The attention of the public being once interested in this direction, will induce many others to look into the business, and a free supply of the product can scarcely fail to greatly extend its use and demand. Few have any idea of the large fortunes annually made out of this branch of industry in Great Britain. The slate quarries of that country are mostly confined to North Wales, and some of the quarries there divide annually from two to three hundred thousand dollars. There is one quarry which has been profitably worked for over fifty years, and which was sold some three years since for $600,000. This has also become an important and profitable business in the Atlantic States. This class of investment is attended with but little risk—not a tithe of that incident to mining for the precious metals, or for copper or tin. The color, cleavage and grain of the California slate, appears to be all that is desirable, and we presume that it will not be long before the quarry proprietors will find it to their advantage to erect extensive sawing and dressing machines. There is already a second quarry opened, not far from the one which is now making such a fine exhibition of its products at the Pavilion.

A Useful Device.—Mr. M. B. Bullard, of 637 Market street, exhibits a very useful addition to the ordinary cooking stove, which is known as Perkins' Revolving Extension Stove-Pipe Shelf. These shelves are attached by a simple contrivance to the pipe above the top of the stove, at any desired elevation, and are used for warming plates or to keep the dishes of food warm for the table; thus avoiding the clutter upon the stove top or hearth. They may also be used for a great variety of other purposes—as for drying fruit, for drying or airing linen, etc., for which latter purpose extension rods are affixed to properly devised loop-holes, after the manner of the horizontal clothes-dryers. These shelves have been extensively introduced at the East, where they are considered great conveniences. They are ornamental in design and construction, and readily commend themselves upon sight to every housewife. They may be seen in the further corner of the machinery department of the Pavilion, where Mr. B. stands ready to explain their use.

The Oriental Coffee-Pot.—Mr. A. C. Taylor, one of our well known pioneers, exhibits an improved coffee-pot, under the above name, with milk heater attached, which combines all the essential features of the Old Dominion, Grecian and French coffee-pots, but which is used precisely after the manner of an ordinary pot for boiling coffee. It has no machinery or clap-trap of any sort attached, to be continually getting out of order; yet does its work well, and will turn out as good a cup of coffee as almost any pot in use. Mr. Taylor also exhibits his well known self-cleansing sewer-trap and slop-hopper, a useful California invention. These devices should be attached to every sink; their general use would add greatly to the health and comfort of families in all thickly settled communities. They received a special premium at the State Fair a year ago, and richly merited such notice. Go and see them. They will be found in the northwest corner of the machinery department, where Mr. T. always stands ready to explain their use and utility.

A Powerful Chorus.—One of the theaters of New York invites the audience to join in singing the chorus to popular songs. There is a flood of sound on such occasions, if tune and time are deficient.

The following notice was found pasted on a large box which passed over the Sioux City and Pacific Railroad: "Baggage smashers are requested to handle this box with care, as it contains nitro glycerine, Greek fire, gun cotton, and two live gorillas." The box was not broken.

Chicago reporters now call a dentist a "tusk-hoister," and a blacksmith a "vulcanist."

OFFICIAL CLASSIFIED CATALOGUE.

Articles on Exhibition at the Seventh Industrial Exhibition of the Mechanics' Institute of the City of San Francisco, 1869.

CLASS I.

Machinery for the Application of Power.

SECTION 1.

Steam Engines, Boilers, etc.

Entry No. of Article.	No. of Article.	
3	3	J. T. Ford, miniature steam engine.
9	9	Geo. T. Pracy, 8-inch engine with fittings.
10	" " "	24 Pracy's governors.
121	153	H. B. Martin, double-acting oscillating steam engine.
183	215	Michael Lawton, model of steam engine.
240	270	Charles O. Farciot, working model of steam engine.
332	384	T. W. Burns, Taylor oil burner, steam generated by crude petroleum, in use under the Pavilion boiler.
336	388	J. W. Bowker, model of improved smoke stack and spark killer.
356	411	Edwin Squires, a one horse-power steam engine.
364	420	Jas. Scrimgeour, model of steam boiler and steam digester.
456	525	David Stoddart, 13 Pickering's engine regulators.
456	529	David Stoddart, model of Gifford's injector.
508	624	Fuller & Co., Johnson's equalizing steam heator.
521	636	John L. Constable, patent steam packing and piston.
533	657	Keep & Bargion, (Stockton) No. 5 Root's force blast blower.
540	665	W. H. Woods, improved steam cylinder cocks.
545	670	P. & R. Wallace, upright engine, (made by exhibitors, who are apprentices in the Union Iron Works).
591	716	L. A. Gould, D. M. Swain's steam alarm water gauge.
592	717	H. S. Smith, set of Dunbar's steam piston packing.
645	784	R. L. Harris, Carvalho's patent steam superheater.
650	821	M. & A. Wilcox, (Sac.) 3 sizes of Wilcox's patent steam water lifters.
651	822	Marsh, Pillsbury & Co., one B. F. Sturdevant's No. 6 blast blower.
651	823	Marsh, Pillsbury & Co., one B. F. Sturdevant's No. 2 blast blower.
652	824	H. J. Booth & Co., one 16-inch hore, 30-inch stroke slide valve, cut-off stroke engine.
594	718	Baker & Hamilton, one 8¼-inch hoisting steam engine.
271	305	Treadwell & Co., one Hoadley's portable steam engine.

SECTION 2.

Hydraulics, Hydrostatics and Pneumatics.

13	20	Ætna Foundry, Hanscom & Co., Hayes' steam pump.
28	39	W. H. T. Clark, Clark's patent pump.
28	40	W. H. T. Clark, metallic stuffing box.
104	133	Berry & Place, 2 of Blake's patent steam pumps.
188	218	A. Myers, (Portland) Leffel's double turbine water wheel.
191	221	Fuller & Co., Bodine Jonval turbine water wheel.
313	363	V. S. W. Parkhurst, 2 champion force pumps.
382	442	Linforth, Kellogg & Rail, Gerrish force pump.
397	463	V. Cushing, 6 Excelsior force pumps.
456	526	David Stoddart, 7 Cameron's special pumps.
456	527	David Stoddart, 2 Sewell & Cameron's fly wheel pumps.
462	548	Baker & Hamilton, Earle's patent steam pump.
512	627	W. D. Hooker, force pump, (California invention).
522	637	Walmsley & Smith, model of a Smith pump, (California invention).
533	658	Keep & Bargion, (Stockton) two globe force pumps.
546	671	N. D. Laswell, two force pumps.
569	689	Walmsley & Smith, Smith's pump, connected with windmill in yard.
590	715	Pacific Pump Manufacturing Company, American submerged pump.
653	825	H. B. Martin, one double-acting oscillating steam pump.

CLASS II.

Machinery and Tools used in the Manufacturing and Producing Arts.

SECTION 1.

Wood and Metal Finishing Machinery.

Entry No. of Article.	No. of Article.	
2	2	J. T. Ford, double hook and eye machine.
8	8	George A. Day, jig belt saw, with swivel table.
9	11	George T. Pracy, 2 lathes.
9	12	George T. Pracy, patent punch.
9	13	George T. Pracy, patent shears.
9	14	George T. Pracy, upright drill.
9	15	George T. Pracy, 4 lathe chucks.
20	30	T. Stebbins, jig saw.
41	52	Pilkington & Lane, Excelsior wood saw.
104	129	Berry & Place, variety wood turning lathe.
104	130	Berry & Place, engine lathe.
104	131	Berry & Place, planing and matching machine.
104	132	Berry & Place, portable drilling machine.
3	4 351	T. D. Young, engine lathe.
364	352	T. D. Young, iron shaping machine.
311	358	Otis Jackson, endless or band saw.
375	433	F. A. Huntington, shingle machine.
378	437	J. Kindleberger & William. A. Arnold, blind shade tenoning machine.
378	438	J. Kindleberger & William A. Arnold, double-acting blind wiring machine.
454	522	William Sellers & Co., (Phila., Pa.) 12-inch shaping machine.
454	523	William Sellers & Co., (Phila., Pa.) 2-inch bolt screwing machine.
462	541	Baker & Hamilton, one medium three-side molding machine.
503	618	L. Castagnino, machine for inlaid work.

SECTION 2.

Miscellaneous Machinery.

14	23	M. P. Hopkins, (Lawrence, Mass.) model of "step for spindles."
15	24	C. P. Traverse & Co., 2 French burr mill stones.
39	51	A. V. Smith, improved store truck.
45	56	J. B. Johnson, model of "Johnson's" patent hoist.
75	92	J. Spaulding, carpet beating machine, "Holm's patent."
77	94	J. W. Sutton, rotation dynamometer.
190	220	D. Simpson, Boston Union gas machine.
213	241	P. G. Willhite, model of Reynold's improvement on flour bolts.
220	248	J. W. Quick, quartz smutter and shaker screens.
298	344	Atwood & Bodwell, 2 Excelsior windmills and one model (working) of same.
310	357	William Lyne, hair picker.
314	365	A. Williams, model of "Douglas" brick machine.
329	381	C. W. Stevens, gas machine.
471	572	A. S. Hallidie, improved grip pulley for conveying power.
475	581	Pacific Straw Works, frame making machine.
542	667	H. J. Booth & Co., lot of wheat and quartz screens.

CLASS III.

Mining, Quarrying and Metallurgy; Machinery and Appliances in connection therewith.

Entry No. of Article.	No. of Article.	
1	1	G. A. Taylor, improved Giant quartz mill.
13	22	Ætna Foundry—Hanscom & Co., cupola and foundry fixtures.
307	354	J. W. Coffey, patent battery shoe and die.
435	501	Thos. Varney, 4 amalgamating pans.
502	617	Risdon Iron Works, 3 shoes and 3 dies for quartz crusher.
516	631	Porter & Collins, Quartz duster.
527	649	W H. Hepburn, amalgamating pan.
530	652	Porter & Collins, quartz crushing machine.
578	783	D. M. Hosmer, model of patent revolving stamp.

CLASS IV.

Agricultural Machinery, Implements and Tools

Entry No. of Article.	No. of Article.	
4	4	W. P. Watson, Portland, gang plow.
6	5	Benj. Harris, stable with patent feed attachment.
6	6	E. H. Willis, 2 cider presses.
13	21	Ætna Foundry—Hanscom & Co., hydraulic wine press.
25	35	John Nestor, Portland, apple-paring machine.
53	63	G. A. Davison & Co., gang plow, California invention and make.
87	106	E. P. Hicks, model of self-opening and self-closing gate.
163	194	Hunter & Wiester, grain separator.
184	216	L. L. Sawyer, Finlayson's seed sower.
219	247	T. Locher, Oroville, working model of steam plow.
267	301	E. C. Bickford & Co., 2 of Packard's patent traction gates for farm and garden.
271	306	Treadwell & Co., 3 of Hutchinson's cider mills.
271	307	Treadwell & Co., potton gin.
271	308	Treadwell & Co., gang plow.
271	309	Treadwell & Co., Powers' seed sower.
271	310	Treadwell & Co., hand seed sower.
280	319	Gustaf Gustafson, patent tree and shrub hox.
283	322	L. L. Sawyer, model of Johnson's patent portable fence.
321	375	Morris, Murpby & Co., gang plow.
334	386	Ives Scoville, side-hill plow.
335	387	A. Williams, rotary harrow.
353	408	F. B. Lamh, vegetable cutter.
367	424	Olpba Bonney, Jr., horse rake.
367	425	Olpha Bonney, Jr., set of grain lifters.
369	427	Richard Knott, Suisun horse power fastener.
369	428	Richard Knott, Suisun, stake puller.
445	513	J. D. Arthur & Son, bent-axle gang plow, 3 cultivators, patent spring double whiffletree.
446	514	O. M. Sherman, 2 models of Rouse's patent step and fruit ladder.
462	639	Baker & Hamilton, 1 fifty-saw cotton gin and and condenser.
462	542	Baker & Hamilton, Sweepstake gang plow.
462	643	Baker & Hamilton, Gem broadcast seed sower and power.
462	644	Baker & Hamilton, Baker & Hamilton's Gem broadcast seed sower for horse-power.
462	545	Baker & Hamilton, Buckeye seed drill.
462	546	Baker & Hamilton, Union mower.
462	547	Baker & Hamilton, 1-cast. cast steel single plow.
477	687	C. W. M. Smith, Turner C. Turrington's improved grape crusher and stem separator.
601	616	E. W. Walton, weed cutter and extra blade.
524	641	M. C. Hawley & Co., Buckeye mower and reaper, with self-rake attachment.
524	642	M. C. Hawley & Co., Buckeye mower, with drop attachment.
624	543	M. C. Hawley & Co., No. 3 Burdick's National hay cutter.
524	644	M. C. Hawley & Co., 2 Deere's plows.
524	645	M. C. Hawley & Co., Peoria plow.
624	646	M. C. Hawley & Co., Collins plow.
536	561	E. Barnes, patent thill attachment.
559	679	D. S. Smith, model of Randall rake.
559	680	D. S. Smith, model of Randall rake, improved.
572	692	Baker & Hamilton, 2 single plows.
572	693	Baker & Hamilton, Gale's feed cutter.
572	694	Baker & Hamilton, Sweepstake horse fork.
677	599	T. S. & T. A. Browu, Brooklyn, Alameda county, field harrow.
532	703	Treadwell & Co., Russell's thrashing machine.
596	719	J. W. Clark, Haywards, Alameda county, grain separator and bluestone mixer.
615	742	L. L. Sawyer, patent cow milker.
629	759	E. B. Hendee, patent trimming shears.
646	784	John Deere, Molino, Ill., 8 assorted plows.
646	785	John Deere, Molino, Ill., walking cultivator.
551	834	H. G. Pratt & Co., 1 Eagle hay press.
663	836	— Hoag, Bloomfield, Sonoma county, one dog power.

CLASS V.

Naval, Military and Civil Engineering and Architecture.

SECTION 1.

Naval Architecture.

Entry No. of Article.	No. of Article.	
15	25	Murdock Campbell, model of a pilot boat.
29	41	George Milledge, model of ship Morning Star.
30	42	Nicolas Castro, model of sloop-of-war Nevada.
123	155	J. F. Fugazzi, model of a Venetian gondola.
126	159	Mrs. M. Carpenter, model of canoe.
161	192	S. F. Cordage Co., Tuhbs & Co., 9 bales of rope, California manufacture.
169	200	Capt. J. Housman, model of a yatch pilot boat.
174	205	John E. Kennedy, model of a propeller screw.
196	225	P. A. Lawson, model of a steamer.
250	282	B. Reiley, set of rowlocks.
308	355	O. T. Stacy, steering apparatus.
365	422	L. D. Herrick, metallic life-boat.
408	475	J. S. Nichols, model of schooner Caroline Mills.
440	508	J. G. Perkins, model of propeller.
471	571	A. S. Hallidie, samples of wire rope, all sizes.
562	682	E. Wakeman, boat with patent detaching gear.
583	704	A. Crawford, 2 patent logs.
583	705	A. Crawford, patent deep-sea lead.
583	706	A. Crawford, patent capstan.
583	707	A. Crawford, patent ship's lamp.
588	712	F. Hansen, model of ship Onward, in glass case.
621	753	A. G. Waterhouse, model steering gear.
13	791	I. E. Thayer, model of schooner and pilot boat.

SECTION 2.

Military Engineering.

26	37	A. F. Potter, Oakland, breech-loading cannon, with box of projectiles.
37	49	Cburch & Clark, samples of pieces of fire-works.
228	256	California Powder Works, samples of blasting, sporting and cannon powder.
351	405	Wm. Rudolph, case of guns, gun locks, sporting articles, etc.
404	470	A. J. Plato, 2 cases of guns, pistols and sporting articles, and 1 cartridge machine.
472	676	W. T. Garratt, 2 brass pounders on black walnut carriages, California manufacture.
674	696	Cranmer & Holden, revolving battery gun.
680	701	S. L. Cutter, samplo of Hafeneggar powder.
656	829	Little & Keading, 2 cases of guns, pistols and sporting articles.

SECTION 3.

Architecture and Civil Engineering.

145	176	J. P. Clay, samplo of pressed brick.
319	370	M. Clark & Co., Sacramento, lot of fire-brick.
319	372	M. Clark & Co., Sacramento, sower and water pipe, and samples of clay.
331	383	Asphaltolin Pipo Co., 9 pieces of asphaltolin pipe.
347	400	Peter Portois, patent earthquake and fire-proof chimney, and patent earthquake-proof brick.
352	406	E. N. Robinson, specimens of roofing slate, flagging, etc.
376	434	P. Martin, cement drainage pipe.
471	670	A. S. Hallidie, Hallidie's patent suspension bridge.
480	689	Benj. F. Freeman, specimens of stair work, consisting of stair rails, posts, balusters, etc.
498	613	— Lynch, Lynch's improved reflector, for cellars, vaults, etc.
617	632	B. P. Rider, Boston, model brick machine.
651	654	Pacific Wood Preserving Co., table made of treated wood; 2 samples of street pavement as they appear when laid; sample of street pavement which has been in drying room of a sugar refinery four months; section of a pile protected against marine worms.
585	709	M. D. Warner, model of Perkins' patent fire-proof ventilated sheet iron window shutter, and door.
35	801	John Daniel, marble mantel and grate.
35	802	John Daniel, 1 Italian statuary marble mantel and grate.

CLASS VI.

Philosophical, Surgical and Dental Instruments

Entry No. of Article.	No. of Article.	
100	123	Warren Holt, terrestial globe.
132	164	Lunberg & Marwedel, case of telegraphic instruments
249	280	A. E. H. Braun, case of trusses.
284	324	John Roach, 1 transit instrument.
281	325	John Roach, 1 theodolito.
284	326	John Roach, 1 level.
284	327	John Roach, material in process of advancement.
239	333	Fairbanks & Hutchinson, 12 different kinds of scales
313	354	V. S. W. Parkhurst, 2 of Howe's standard and 9 counter scales.
339	414	Drs. Folleau & Mabon, show case containing collection of trusses, and orthopedic instruments and surgical appliances.
339	415	Drs. Folleau & Mabon, show case of artificial legs, all invented and manufactured by exhibitors.
419	486	Mrs. M. A. Snydam, 3 patent cornea restorers.
437	505	Dr. E Bolle, patent apparatus for extracting teeth.
478	537	National Watch Co., Warren, Spadone & Hayes, agents for Pacific Coast, 5 Elgin movements, 4 cards containing different parts of the Elgin watches; 3 heavy 18-caret Elgin watchos; 3 silver Elgin watches
566	685	J. S. Phillips, port ible assaying machine.
3	7c7	California Business University, 3 sets of telegraph instruments.

CLASS VII.

Manufactures in Metals.

Entry No. of Article.	No. of Article.	
18	27	Morgan Gale, fancy shoeing hammer.
18	28	Morgan Gale, large A tuning fork.
25	36	John Nestor, Portland, combined carpenter's tool for weather-boarding.
59	71	Misgill & Coopor, samples of California manufactured horse shoes.
91	111	Ephraim Vorhes, combination lock, California manufacturo.
98	120	J. Perham, 2 stove pipe extension shelfs.
110	140	F. T. Houghton, 2 petroloum stoves.
110	141	F. T. Houghton, 2 automatic clothes washers and boilers.
110	142	F. T. Houghton, 3 patent chopping knives.
119	151	John McLeod, combined latch and lock.
148	179	Charles Otto & Co., case of twist drills, steel squares, tools, etc.
148	180	Charles Otto & Co., case of brass and plated goods, California manufacture.
151	183	Phelps Bros., boxes of bolts and nuts, turnbuckle and seg-screws, Cal. manufacture.
177	208	Henry Axtell, 2 pair of wire cutters.
182	214	Jacob Whitney, 2 tire lighters.
194	224	Ellis Ayers, 2 stoves and fixtures.
200	226	A. L. Stimson, Chicago, 4 Westlake patent lanterns—No. 1, tin, called the "Sun;" No. 2, heavy tin, called the "Railway King;" No. 3, brass, called the "Conductor's Pet;" No. 4, silver-plated, called the "Railway Queen:"
225	253	American Saw Co., samples of movable teeth, perforated and solid saws.
239	269	Wm. Jones, Clipper Mills, Butte county, steam pressure culinary vessels.
241	271	C. H. Foster, specimen of Foster's substitute for brass hinges.
285	329	J. B. Owens, cool oil stoves and lamps.
287	331	Standard Soap Co., submerged coffee pot.
289	335	Matthew Cooke, 2 "Little Giant" cast steel blasting wedges.
306	353	Gallagher, Weed & Co., whistles, gongs, hose pipes, couplings, nozzles, steam, water and gas cocks, brass hinges, rowlocks, etc., California manufacture.
333	385	Risdon Iron Works, 4 car wheels.
337	389	P. Riley, 2 pair of patent gas-pipe tongs.
345	393	M. Price, 2 cases of cutlery.
346	399	Joshua Gray, samples of broom, solder, piano covering and hook and eye wire.
353	409	F. B. Lamh, stove handle and household tool combined.

356 410 E. N. Robinson, tin ore, pig tin, sheet tin and tinware, from the San Jacinto Tin Mines of California.
373 432 Pacific Rolling Mill Co., hammered and rolled shafting, round, square and flat merchant iron, band iron, street railroad iron, horse shoe shapes, railroad axles and spikes, nuts, washers, machine and log bolts.
377 435 Schmester Bros., 2 Union ranges and parts.
378 436 J. Kindleberger and W. A. Arnold, reversible loose joint butts.
379 439 Carl Hinz, case of moulding tools.
380 440 Brittan, Holbrook & Co., stoves and fixtures, copper, tin, brads and tinned ware, and lot of Japanese ware.
383 443 Garvey & Kimball, steamboat and house bells, pulls, knobs, etc.
393 460 John Bobn, 3 stoves and fixtures.
399 466 Lawton & Co., milk cans.
400 467 San Francisco Lead, Pipe and Shot Works, pig lead, lead and tin pipe, drop shot and lead ore.
421 488 L. D. Herrick, Hendrickson's patent chimney top, and Herrick's sprinkler.
436 604 Root & Nye, chandeliers in blue and gold—gold gilt, French and English bronze, Egyptian, Gothic and Flemish sty es; chandeliers with center lights, to drop one or more lights; Gothic standards, in bronze and gilt figures, for drop lights; marble ornaments; bronze figures; gilt, bronze and marble clocks.
450 518 Cassin & Proctor, patent funnel.
455 528 David Stoddard, 6 English ratchet braces.
456 530 David Stoddard, 5 turning tools.
459 533 Jonathan Kittredge, Monitor safe, with California-made lock.
459 634 Jonatbau Kittredge, 4 fire and burglar-proof safes.
459 535 Jonathan Kittredge, 7 fire-proof safes, all California manufacture.
456 653 Will & Finck, 2 botel anunnciators.
472 574 W. T. Garratt, steam whistles, gongs, hose pipes, nozzics, couplings, torches, water and steam gauges; water, steam and gas cocks; globe valves, safety valves, boxes for shafting, composition nails for sheathing, sounding leads, pumps, Garratt's anti-friction metal, etc.
472 675 W. T. Garratt, 2 California-made bells, 480 and 850 pounds weight, with frames and wheels complete.
473 677 H. T. Graves, wire summer bonse, wire window screens, wire chairs, fenders, trellis work, sieves, riddles, coal screens, grape stemmers, meat safes, show stands, wire netting, wire cloth bird cages, patent weather strips, Cramer's patent window-lifting rods and plates.
474 679 J. H. Culver, improved calipers, California patent and manufacture.
529 635 K. Vail, 4 iron planes, Palmer's patent.
543 568 A. C. Taylor, slop boppers with patent traps, patent iron sinks, patent coffee pots and dish pans, all California inventions.
647 672 Pacific Saw Manufacturing Co., saws, mandrels, pruning knives, reaper and mowing machine sections, carrier knives, etc.
548 673 N. W. Spaulding, circular saws, with Spaulding's patent teeth.
563 663 August David, 2 ice cream freezers.
607 732 Currier & Winter, Howard & Tborndyke's improved mitering machine.
610 736 George Ruben, samples of patent sauce-pan covers.
657 830 J. C. Hammond, Sacramento, samples of I X L metal for friction bearings and journal boxes.
665 838 R. F. Osborn & Co., case of cabinet hardware.
665 839 R. F. Osborn & Co., case of carriage hardware.
665 840 R. F. Osborn & Co., case of tools.

CLASS VIII.

Wood and Its Manufactures.

Entry No. / No. of Article.

42 54 S. P. Taylor & Co., samples of California-made brooms and brushes.
68 83 F. Korbel & Bro., samples of cedar for counter tops, cigar box materials, and back boards for picture frames.
68 84 F. Korbel & Bro., laurel, rosewood, mahogany, Spanish cedar, maple and redwood veneers.
72 88 Elam & Howes, samples of wood and willow ware, their own manufacture.
106 135 S. E. & J. J. Hollister, washing machine and wringer.
106 136 S. E. & J. J. Hollister, model of washing machine.
127 160 Mrs. A. D. Waldron, washing machine.
156 187 D. G. Lewis, 2 washing machines with mangle attachments, and 2 wringers.
182 213 Jacob Whitney, Isabella washing machine.
272 311 Figer Bros., California-manufactured brushes.
279 312 Ezra Coleman, lot of boot-jacks.
330 382 E. A. Stockton, washing machine.
453 407 F. B. Lamb, 2 Pioncer washers.
384 444 Thos. J. Hall, lot of willow ware.
418 485 I. E. Thayer, stick of laurel timber 48 feet long, 28x28.
429 496 E. C. Bickford, Low's premium rotary washing machine.
473 559 A. Hatton & Co., 3 patent knife-cleaning machines (clean 600 per hour).
476 686 Dewey & Co., E. F. Dowey's patent cutter and can-opener.
525 647 M. C. Hawley & Co., Union washing machine.
531 553 Miss M. P. Carpenter, improved fluting machine, California invention.
537 662 J. W. Wissinger, patent swing.
550 675 Frank Buckclew, California washing machine.
670 690 W. A. White, samples of non-conducting iron-holders, California invention.
531 761 California Wine Cooperage Co. (M. Fulds, Son & Co.), mammoth cask, 4,155 gallons.

CLASS IX.

Glass, Pottery, Earthenware, Etc.

Entry No. / No. of Article.

123 165 J. F. Fugazzi, glass neck ties, etc.
180 211 John Mallon, specimens of ornamental glass cutting.
288 332 Son & Briggs, case of meerschaum pipes.
319 371 M. Clark & Son, Sacramento, lot of stoneware.
339 391 Pacific Glass Co., lot of assorted glassware.
381 441 Albion Pottery, lot of pottery ware.
464 650 Thomas O'Neil, samples of ground and cut glass.
471 673 A. S. Halbdie, samples of Morgan's plumbago crucibles.
679 700 Wm. Ries, Salt Lake, 2 samples of porcelain manufacture from Salt Lake.
623 755 Haynes & Lawton, show case of fine China ware.
5 788 S. & G. Gump, 4 pier mirrors.
5 789 S. & G. Gump, 2 mantle mirrors.
6 790 Whittier & Fuller, large mirror and frame, made by Jones & Wooll.

CLASS X.

Minerals, Geological Formations, Chemical Substances, Chemistry, Oils, Soaps, Candles, Dyeing, Distilling, Etc.

Entry No. / No. of Article.

23 33 George Pfeiffer, large cabinet of mineral and geological specimens.
31 43 George P. Rose, large cabinet of mineral specimens.
36 46 Hucks & Lambert, samples of axle grease.
47 57 J. J. Knowlton, boxes and bottles of California writing ink.
51 61 C. J. Clark, case of volcanic specimens from Hawaii.
67 67 S. Pillsbury & Co., samples of Madame Balcear's washing fluid.
67 68 S. Pillsbury & Co., samples of Parepa Rosa's toilet companion.
67 69 S. Pillsbury & Co., samples of liquid laundry blue.
61 75 J. G. Steele & Co., case of Stuart's "[Sun Pearl" for the complexion.
65 79 Hugo Mahnz, case of amiline dyes.
70 86 Pacific Match Factory, samples of California made matches.
88 107 A. Golish, samples of California made matches.
109 139 Samuel Purdy, samples of a composition on wire cloth and wood.
120 152 Dr. Barker, samples of a chemical compound for strengthening cordage, etc.
123. 154 J. F. Fugazzi, Sacramento, case of hair dyes, tonics, restoratives, pomades, etc.
133 165 Michael Lebetard, samples of Russian inflammable balls.
134 166 Dana & Coddington, California made glue in barrels and sheets.
134 168 Dana & Coddington, samples of neats foot oil.
137 171 Charles Zwick, Caucasian fly glue.
154 185 L. R. Mills, Pacific Congress and seltzer water.
209 237 M. Howard, hair restorative.
211 239 Boyd & Co., yeast powder, baking powder, cream of tartar and saleratus.
221 249 J. Walker, vinegar bitters, sapoine for the teeth, and cooking extracts.
251 283 Edward Louis, samples of aromatic water.
256 268 Lampe & Bro., samples of Spanisb lustral for the hair.
258 290 G. Heuter, samples of varnishes, sealing wax, cements, etc., California manufacture.
276 316 G. S. Brown, You Bet, Nevada county, specimens of gold-bearing cement and gravel.
287 330 Standard Soap Co., assorted soaps, and samples of chemicals incidental to the manufacture of candles.
312 359 Henry Lake, 6 boxes of patent blacking.
326 377 Geo. Waite, 6 boxes of California magic polish.
338 390 Crane & Brigham, case of sulpbate of copper.
348 402 B. F. Barton & Co., samples of soda, saleratus, salt, cream of tartar and yeast powder.
349 403 Parrish Soap Works, samples of Kane's condensed soap, finids, etc.
364 419 James Scringeonr, Chilcott soap.
385 445 Prof. A. P. W. Partz, a large specimen of portzite, a lately-discovered mineral, from Blind Springs District, California.
410 477 J. G. Hatch & Co., samples of Spanish dressing and blacking for ladies' and children's shoes, and dressing blacking for shoe dealers and manufacturers.
427 494 Gabel & Co., samples of axle grease.
441 509 Pacific Oil and Lead Works, samples of raw and boiled linseed oil, castor oil, linseed oil cake and linseed oil cake meal, flax seed, castor beans and metallic paint.
449 617 Sonntag & Co. (agents for Dr. Wilmar Schwabe homeopathic establishment, Leipzig, Saxony), 2 show cases of homeopathic medicines, chests and medical works.
457 631 J. E. W. Coleman, specimens of oxygenated paint.
476 685 Dewey & Co., mineral and cabinet specimens, curiosities, etc.
482 591 Dr. L. G. Yates, Centerville, Alameda county, case of geological specimens.
485 696 Dr. J. H. Wood, Napa, case of Napa soda.
513 628 M. H. Garland, cough drops in cases and bottles.
529 657 Mining and Scientific Press, systematic collection of minerals, rocks, fossils, and metallurgical specimens.
539 664 Challenge Soap Co., case of samples of challenge soap.
565 685 D. E. Vincent, magic cough cure.
567 689 J. H. Warwick, samples supolis.
581 702 Stringer & Co., samples of axle grease.
601 725 Mrs. R. L. Jones, Sacramento, patent stamping powder for embroidery, black and white.
606 731 Justin Gates & Bros., glass case of perfumery and chemicals.
553 743 Dr. G. H. Clapp, chemical washing soap.
619 757 Cordillera Mining Co., silver ore.
674 845 Robert C. Beatie, specimens of the black oxide of manganese, from the Tide Water manganese mine, near San Jose.

CLASS XI.

Jewelry, Silver and Plated Ware.

Entry No. / No of Article.

90 110 Mrs. D. S. Hutchinson, case of specimens of mechanical deutistry.
147. 178 George M. Wood & Co., case of stencils, stock, door plates, seals, etc.
179 210 T. C. Jessup, case of operative dentistry.
207 235 John J. Joiner, metallic signs, and specimens of engraving on metal.
235 264 Mrs. C. Cook, 2 cases of hair jewelry.
246 277 Odermatt & Ettbn, patent fountain pens and drawing instruments.
255 287 George T. Casebolt, 2 cases of silver-plated ware for coaches, lamps, etc.
422 489 G. L. Adams, specimens of operative dentistry.
509 525 San Francisco Plating Works, case of plated ware, and case of old ware re-plated.
617 749 N. Bassett, 2 bars of silver from 12 pounds of rock from Treasure Key mine, White Pine district.
624 756 Pacific Plate Works, by Haynes & Lawton, case of gold and silver-plated wares.
31 799 Jones & Wooll, one mirror plate.
111 143 Geo. W. Patch, samples of stencil work.
62 76 F. M. Truworthy, stencil plates and impressions.

Note.—Any error or omission occurring in this list will be remedied on application to the Entry Clerk in the Pavilion.

A Baby Show.—California wants a new sensation. Its people are so fast, enterprising and reckless, that they have "played out" everything except the babies, and of these—whew!—they have the most, best, handsomest and biggest in creation. Why not have a show of them? We have have had shows of big cows, bulls, calves, sheep, hogs and asses, and why not of big babies? What are all the breeds of cattle in comparison to breeds of men and women? If it is of such importance to the State to raise good stock as to offer premiums for the best, why don't we give premiums for the best babies? Only fancy the interest and excitement that would attach to an exhibition of five thousand handsome, fat babies and their interesting mammas! There is not a bachelor or Benedict in the State but would go to see them; and the ladies would be sure to go because all the gentlemen would be there. Oh that we had some of Barnum's genius amongst us! California's grandest, best and most beautiful products would not be long unexhibited.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the Mining and Scientific Press and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

Name, Location, Amount, and Date of Assessment.	Day Delinquent.	Day of Sale
Alleghany Cons., Sierra co., Sept. 24, 30c	Oct. 25	Nov. 15*
American, Storey co., Sept. 15, $1 50	Oct. 19	Nov. 4
Black Jacket, White Pine, Aug. 13, 10c	Sept. 17	Oct. 21
Buckhin, White Pine, Sept. 30, 5c	Nov. 6	Nov. 26*
Bullion, Storey co., Nev., Aug. 21, $10	Pay. Immediately.	
Calu. State, Calaveras co., Sept 7, $1	Oct 7	Oct. 20
Cherokee Flat, Butte co., Sept. 3 $5	Oct 6	Oct 21
Eclipse Cons., White Pine, Aug. 11, 50c	Sept 16	Oct. 3
Etna, White Pine, Aug. 27, 15c	Sept. 30	Oct 20
Evening Star No. 1, White Pine, Aug. 25, 10c	Oct. 2	Oct. 22*
Featherstone, White Pine, Aug. 31, 30c	Oct 7	Oct. 26
Chloride Flat Comp., W. P., Sept. 16, $1	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c	Oct. 18	Nov. 5
Hearst, White Pine, Sept. 15, 50c	Nov. 1	Nov. 22
Hope Gravel, Nevada co., Sept. 20, $1	Oct. 25	Nov. 15
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
Manson, Amador co., Sept. 22, $1	Nov. 1	Nov. 24
Metropolitan, White Pine, Sept. 11, $2.50	Oct. 13	Nov. 3
North Bloomfield, Nevada co., Sept. 20, $5	Oct. 22	Nov. 8
North Amerb a Cons., W. P., Sept. 27, 2½c	Nov. 1	Nov. 22*
Orig. Bld. Treasure, White Pine, Aug. 8, $2	Oct. 4	Oct. 23
Rhinoceros, Alpine co., Sept. 16, 25c	Oct. 20	Nov. 6*
Rathburn, White Pine, Aug. 27, 50c	Oct. 1	Oct. 21
Siempre Viva, Mexico, Sept. 17, $1.50	Oct. 21	Nov. 8*
Silver Wave, White Pine, Aug. 28, 20c	Sept. 22	Oct. 20*
San Jacinto, Tin, San Berdino co., Aug 20, 5c	Oct. 20	Oct 18
Senator, Storey co., Nev., Sept. 6, 50c	Oct. 18	Nov. 8
Sierra, Douglass co., Nev., Aug 20, $2	Sept. 23	Oct. 14
Taylor, El Dorado co., Aug. 25, 20c	Oct. 4	Oct. 20*
Thunderbolt, White Pine, Sept. 14, 5c	Oct. 18	Nov. 6
U. S. Grant, Nevada co., Sept. 21, 50c	Oct. 22	Nov 13*
White Pine Mutual Sept. 15, $1	Oct 20	Nov. 8
Wells, White Pine, Aug. 10, 30c	Sept. 17	Oct. 7*
Wheeler, Esmeralda co., Sept. 20, $1	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

Glenwood.....Meeting Oct. 27
Mineral City, White Pine, Aug. 24, 50c.....Oct. 7—Oct. 22
Miser's Dream.....Meeting Oct. 5
Occidental, Storey co., Nev.....Annual Meeting Oct. 9
Siempre Viva.....Adjourned Meeting Oct. 4
Segregated Belcher, Storey co.....Annual Meeting Oct. 5
Washtello.....Adjourned Meeting Oct. 18*
White Pine Smelting.....Meeting Oct. 15

LATEST DIVIDEND.

Amador Co., div. $3 per share .....Payable August 7, 1869
Alpha Cons., Storey co., Nev., div. $2.....Payable June 19, 1868
Bacon, Storey co., Nev., div.....Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.....May 10, 1869
Crown Point, dividend, $7.50.....Payable Sept. 12, 1868
Chollar Potosi, div., $2.....Payable August 6, 1869
Eureka, div. $5.....Payable August 10, 1869
Emptre M. & M., Nev., dividend $5. ..Payable May 15, 1867
Gould & Curry, div., $7.50.....Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50...Payable July 13, 1868
Golden Chariot, Idaho, div. $3.....Payable June 15, 1869
Golden Rule, Tuolumne co., div. 5c ₰ sh..Pay. Aug. 26, 1869
Hale & Norcross, div. $6.....Payable July 10, 1869
Imperial, Storey co., Nev., div.....Payable June 20, 1868
Industry, White Pine, div., $4.....Payable July 1, 1869
Keystone, Sierra co., Nev., div., $32.....Payable May 6, 1868
Kentuck, div., $20 per share.....Payable Jan. 10, 1869
North Star, dividend, $5.....Payable Aug. 15, 1868
Occidental, div. $2.....Payable March 2, 1869
Pacific Unassessable, div.....Payable June 18, 1868
Segal Tender Salt, dividend $4.....Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50...Payable Dec 19, 1868
Savage, Virginia, Nev, dividend, $4...Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1 ...Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c...Pay. August 10, 1869
Virginia & G. H Water Co., Dividend, payable April 10, 1869
Yellow Jacket, div., $5.....Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. Stock and Exchange Board

Friday Evening, October 1, 1869.

Miscellaneous Stocks.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	—	—
Legal Tender Notes	76	76½
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par	& int.
San Francisco City Bonds, 6s, 1853	85	87½
San Francisco School Bonds, 10s, 1859	100	—
San Francisco School Bonds, 10s, 1861	par	& int.
San Francisco City and Co. Sch'l B'ds, 7s, 1865	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	75	80
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 10s	75	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	45	50
State Telegraph Co	25	—
Sprng Valley Water Co	63	63½
Gas Companies.		
San Francisco Gas Co	86	88¼
Sacramento Gas Co	52	53
Railroads.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	70
Central Railroad	56	—
North Beach and Mission Railroad	67½	69
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
Insurance Companies.		
Firemans' Fund Insurance Co	96	100
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	96	100
Home Mutual Insurance Co	101½	102
Occidental Insurance Co	85	90
People's Insurance Company	90	95
Banking Institutions.		
Pacific Bank	97¾	100
The Bank of California	145	—
Mining Stocks—Washoe District.		
Alpha	14	14¼
Baltimore Americau	—	—
Belcher	14	—
Bullion, C. H	—	15
Crown Point	15	15½
Cole (Va.)	—	—
Confidence	20	—
Consolidated Virginia	—	—
Chollar-Potosi	14¼	14¾
Daney	½	—
Exchequer	3	4
Empire Mill and Mining Co	16	16¾
Gould & Curry	69	70
Gold Hill Quartz	15	20
Hale & Norcross	117	118
Imperial	30	—
Julia	—	¾
Justice and Independent	2	2½
Kentuck	170	171
Lady Bryan	20	—
American	¾	¾
Occidental	9½	10
Ophir	14	14¾
Overman	73	75
Segregated Belcher	8	8¼
Savage	38½	39
Sierra Nevada	—	7½
Union	—	—
United States	—	—
Yellow Jacket	38	39½
Miscellaneous Mining Stocks.		
Amador (California)	290	292
Aurora, White Pine	—	3
Eureka, (California)	220	225
Golden Chariot (Idaho)	20	—
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

San Francisco Market Rates.

Wholesale Prices.

Friday, October 1, 1869.

Flour, Extra, ₰ bbl	$5 00	@	$5 50
Do. Superfine	4 00	@	4 50
Corn Meal, ₰ 100 lbs	2 00	@	2 25
Wheat, ₰ 100 lbs	90	@	1 75
Oats, ₰ 100 lbs	90	@	1 25
Barley, ₰ 100 lbs	85	@	1 00
Beans, ₰ 100 lbs	2 50	@	3 50
Potatoes, ₰ 100 lbs	75	@	1 50
Hay, ₰ ton	8 00	@	13 00
Live Oak Wood, ₰ cord	9 00	@	14 00
Beef, extra, dressed, ₰ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₰ lb	5	@	6
Hogs, dressed, ₰ lb	9	@	10

Groceries, Etc.

Sugar, crushed, ₰ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₰ lb	19	@	—
Do. Rio	—	@	19
Tea, Japan, ₰ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₰ lb	9¾	@	10
China Rice, ₰ lb	5¾	@	6
Coal Oil, ₰ gallon	53	@	55
Candles, ₰ lb	16	@	18
Ranch Butter, ₰ lb	50	@	60
Isthmus Butter, ₰ lb	25	@	35
Cheese, California, ₰ lb	15	@	17
Eggs, ₰ dozen	60	@	65
Lard, ₰ lb	17	@	18
Hams and Bacon, ₰ lb	17	@	19
Shoulders, ₰ lb	—	@	10

Retail Prices.

Butter, California, fresh, ₰ lb	50	@	75
do. pickled, ₰ lb	35	@	40
do. Oregon, ₰ lb	25	@	50
do. New York, ₰ lb	35	@	40
Cheese, ₰ lb	20	@	25
Honey, ₰ lb	25	@	50
Eggs, ₰ dozen	70	@	75
Lard, ₰ lb	20	@	22½
Hams and Bacon, ₰ lb	—	@	25
Cranberries, ₰ gallon	1 00	@	1 25
Potatoes, ₰ lb	2	@	3
Potatoes, Sweet, ₰ lb	2	@	3
Tomatoes, ₰ lb	2	@	3
Onions, ₰ lb	2	@	3
Apples, No. 1, ₰ lb	4	@	5
Pears, Table, ₰ lb	5	@	—
Plums, dried, ₰ lb	10	@	12
Peaches, dried, ₰ lb	10	@	15
Oranges, ₰ dozen	50	@	75
Lemons, ₰ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₰ lb	30	@	35
Soap, Pale and C. O	10	@	12
Soap, Castile, ₰ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Friday, October 1, 1869.

Iron.—Duty: Pig, $9 per ton; Railroad, 60c ₰ 100 lbs; Bar, 1@1½c ₰ lb; Sheet, polished, 3c ₰ lb; common, 1½@1¾c ₰ lb; Plate, 1¾c ₰ lb; Pipe, 1¾c ₰ lb; Galvanized, 2¼c ₰ lb.

Scotch and English Pig Iron ₰ ton	$32 50	@	$35 00
White Pig ₰ ton	30 00	@	32 00
Refined Bar, bad assortment, ₰ lb	— 03	@	— —
Refined Bar, good assortment, ₰ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04½	@	— —
Plate, No. 5 to 9	— —	@	— 04¾
Sheet, No. 10 to 13	— 04½	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5¼
Sheet, No. 24 to 27	— 05	@	— 0¼

Copper.—Duty: Sheathing, 3½c ₰ lb; Pig and Bar, 2½c ₰ lb

Sheathing, ₰ lb	— —	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nulls	— 21	@	— 22
Composition Bolts	— 21	@	— 22

Tin Plates.—Duty: 25 ₰ cent. ad valorem.

Plates, Charcoal, IX, ₰ box	12 00	@	— —
Plates, I C, Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₰ lb	— 40	@	— 42½
Steel.—English Cast Steel, ₰ lb	— —	@	— 15
Quicksilver, ₰ lb	— 55	@	— 60
Lead.—Pig, ₰ lb	— 7½	@	— —
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
Zinc, Sheets, ₰ lb	— 10½	@	— 11
Bonax.—California, ₰ lb	— 38	@	— 40

San Francisco Prices of Copper Ores.

San Francisco, Oct. 1, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		Per ton
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 80
16 " "	35 20	30 " "	75 60
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

These prices, corrected by W. T. Atwood, we believe will be found substantially correct, and can be realized at this date.

Masonic Mirror.—A very neatly printed monthly under this title, made its appearance last week, being "devoted to the interests of Masonry on the Pacific Coast." The editor is Amasa W. Bishop, P. M., and the publisher, F. R. Carrick, No. 608 Market street. Subscription price, $2.50 per annum. Table of contents: Salutation, East and West, Rebolds; History of Free Masonry; Life—What is it; Let there be Light; The Eye of Masonry; Explorations at Jerusalem; Historical Notes; Vouching of Visitors; Admission of Candidates; Antiquities of Free Masonry, Walter Scott; St. John's Day; Mysterious Organist: pp. 32.

Central America Mahogany has been introduced here by Hobbs, Gilmore & Co., being found cheaper than the Eastern. ***

Opera Glasses, telescopes, magic lanterns, drawing instruments, microscopes, etc., at C Muller's, 205 Montgomery street, Lass Block.

Receipts of the Fair.

Date	Daily Receipts.	Total Receipts.
Saturday, Sept. 11	$ 9 50	$ 9 50
Monday, Sept. 13	722 50	732 00
Tuesday, Sept. 14 (open'g day)	6,141 00	6,873 00
Wednesday, Sept. 15	3,636 75	10,509 75
Thursday, Sept. 16	2,845 50	13,345 25
Friday, Sept. 17	2,493 75	15,839 00
Saturday, Sept. 18	3,850 25	19,689 25
Monday, Sept. 20	2,524 00	22,213 25
Tuesday, Sept. 21	2,040 00	24,253 25
Wednesday, Sept. 22	2,150 00	26,403 25
Thursday, Sept. 23	2,001 50	28,404 75
Friday, Sept. 24	1,400 00	29,804 75
Saturday, Sept. 25	2,215 75	32,020 50
Monday, Sept. 27	1,408 00	33,428 50
Tuesday, Sept. 28	1,377 00	34,805 50
Wednesday, Sept. 29	1,639 50	36,445 00
Thursday, Sept. 30	1,848 25	38,293 25

Steam is on after 2 P.M. daily. Music at 2 and 8 P.M.

The Human Voice.—A strong human voice, when pitched at a high key, has been known to produce vibrations sufficiently strong to break glass. This was once done in a London coffee-house, by the well known tenor singer, Mr. Broadhurst. He caused the bowl of a wine glass, sitting upon a table, to separate from the stem by sounding a high note. The effect of the voice upon flowers has been made widely known by the recent lectures of Professor Tyndall.

A Mountain Range of Iron Ore in Alaska.—Professor Davidson, of the United States Coast Survey, reports discovering during his recent eclipse expedition in Alaska, a mountain range of iron ore, extending from the month of Chilkahl river far beyond his astronomical station. The range has an elevation of two thousand feet, and causes a local deviation of compass of two degrees.

The national Pomological Convention, which has just been holding a three days' session in Philadelphia, concluded by a grand dinner, adjourned to meet in Richmond, in 1871. A fruit-preserving house, invented by Reese, was favorably reported upon.

Mining and Scientific Press.

PUBLISHED EVERY SATURDAY,

At No. 414 Clay Street, San Francisco.

If you are an Inventor, Patentee, Miner, Farmer, Manufacturer, Mechanic, or a progressive Student or Artisan in any Industrial or Professional Calling in the Pacific States or Territories, you are doing yourself irreparable injustice, if not already a subscriber and reader of the Mining and Scientific Press.

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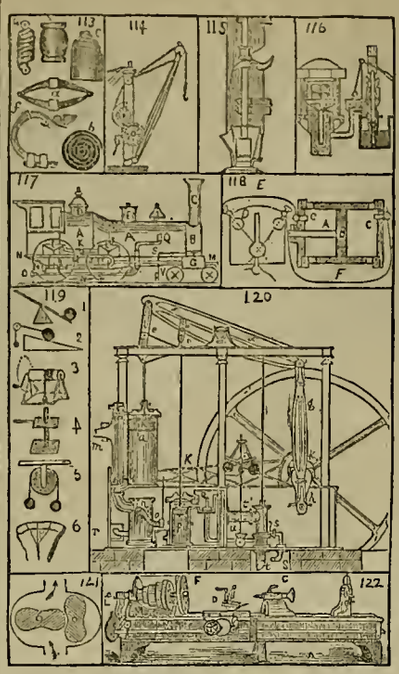
Callahan's Ranch, Sept. 24, 1869.

Messrs. Dewey & Co.—Goats :—Letters patent received yesterday, and you will please accept thanks for your prompt efforts in securing them.

Yours, etc., F. H. Brinkkotter.

The "first spike" was driven on Tuesday in the Virginia and Truckee Railroad, and already there is a locomotive running on the track.

Pamphlet Patent Circulars free at our office in the Pavilion.



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The accompanying plate is from a series of Mechanical Movements illustrated and described and illustrated in our free circular, just issued, which contains a large amount of valuable information relating to Caveats, Patents, Patent Laws and Decisions, and the Rights and Privileges of Inventors, Patentees and Assignees. Copies sent to any address on receipt of postage stamp.

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We draw up legal assignments for patentees; record assigaments in the Patent Office; procure copies of United States and Foreign Patents; make examinations here and at Washington regarding the patentability of inventions, take up and prosecute rejected cases, depending upon success for our fees; reissues taken out; interferences prosecuted—in fact, every legitimate branch of the patent agency business is thoroughly conducted by us here and our branch agency in Washington.

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From an endless series of appreciative testimonials and frank acknowledgements, we give the following:

"Tidal Wave" Office, Silver City, Idaho Territory, July 27th, 1869.

Messrs. Dewey & Co.—Gentlemen:—Allow me to express my high appreciation of the ability and business management of the Mining and Scientific Press Patent Agency, and to say that our business relations have been marked with the utmost promptitude upon your part and with entire satisfactiou upon mine.

Yours, etc., Jno. S. Butler.

Marysville, Cal., August 13th, 1869.

Messrs. Dewey & Co.—Gents:—Enclosed find $20 (currency) for last fees on patent for gang plow. I am very much surprised, after opinions received from Munn & Co. I am, respectfully, yours, F. A. H.

The original of the above letter (and many others with similar reference to other agencies) can be seen at this office, in cases for which we have secured patents for inventors who had been denied patents, or who had paid for being told that they could not obtain patents. Inventors on the Pacific coast are fast learning to patronize first-class home agents, who better understand their cases and will give more thorough attention to every invention entrusted to their keeping.

DEWEY & CO.,
U. S. and Foreign Patent Agents.

Somersville, Cal., August 25th, 1869.

Messrs. Dewey & Co.—Dear Sirs: Allow me to return you my thanks for the very able manner in which you have conducted the business entrusted to your care. You will please forward the documcut (British Patent) by Bamber's Express to this place. Yours, respectfully,

Geo. Hawkhurst.

Jamestown, Cal., July 6th, 1869.

Messrs. Dewey & Co.—Gentlemen:—The Patent for our Ore Washer and Concentrator was duly received by express. We return you our thanks for the promptness and successful manner which have attended your efforts in our behalf. Yours, Wm. G. Heslep.

The Right Stamp!—One of our wide-awake California inventors (who has already received two patents through this office) evinces the true winning spirit in the following note:

San Jose, Cal., June 29, 1869.

Messrs. Dewey & Co:—A few days ago I received your letter apprising me of the rejection of my case, etc. Well, under the circumstances, I will just say, "*Let 'er rip!*" and I will remember the indefatigable Zack. Taylor's advice to his soldiers—"Pick your flint and try it again." I will have to try and get even on somethiug else. I am satisfied you have done your duty as agents. Yours, J. F. C.

Suisun City, Cal., June 26, 1869.

Messrs. Dewey & Co:—This is the third time you have presented me with Letters Patent within twelve months. Gentlemen, you have done all I have asked of you—you have been honest; you are men that an inventor can rely upon for doing business for him, and he need not fear of being swindled or wronged in any way. I would give you business to do in your various departments in preference to any one else. Many thanks to you for your success. You have obtained valuable patents for me, and I appreciate your kindness, your honesty, ability and success. Yours, Richard Knott.

Mayfield, Cal., June 26, 1869.

Dewey & Co., *Patent Solicitors, San Francisco*—Gentlemen:—In acknowledging the receipt of my Letters Patent, allow me to express my thanks for the skilful and trustworthy manner in which you have conducted my business before the Department at Washington. I am perfectly satisfied with the high degree of ability and integrity displayed in the management of my case, and I know of no similar agency in which I could place corresponding trust. Yours truly, J. M. Johnson.

Nevada City, Nov. 3d, 1868.

Messrs. Dewey & Co.—Gentlemen:—Your favor of the 30th ult., is just received, informing me of the successful prosecution of my application for a patent on my "Hair Cutting Shears." Please accept my sincere thanks for the speedy and successful manner in which you have conducted the case, and believe me, as ever,

Very truly yours, Lee D. Craig.

San Francisco, May 5, 1869.—Messrs. Dewey & Co. Gentlemen:—Allow me to express to you many thanks for services rendered me in procuring my patent, which has just come to hand. I would also say that your work has been faithfully done, and your advice and representations have in all cases been honest and truthful.

Respectfully, Geo. Inwood.

San Francisco, April 19, 1859.

Messrs. Dewey & Co., Patent Agents.—*Gentlemen:*—Allow me herewith to tender you my sincere thanks for the efficient assistance you have rendered me in securing my patent, and other papers, as well as the promptness and energy displayed by you in our business transactions. Very respectfully yours, C. E. Jaycox.

Portland, Oregon, May 2, 1869.

Messrs. Dewey & Co—*Gentlemen:*—Receive my kindest thanks for your attention in the matter of bringing my application for a Patent to a successful issue.

Thomas Mann

Grass Valley, Dec. 2, 1868—*Messrs Dewey & Co:*—Having received the patent for Symons & Co's Tossing and Refining Concentrator, through your Agency, we return our sincere thanks to you for your unrivalled success. Yours, respectfully, Symons & Harry.

Lexington, April 3, 1869.

Dear Sirs:—The Letters Patent have just come to hand For the prompt and business-like manner with which you have put the matter through, please accept my thanks. Geo. W. Teasdale.

To Dewey & Co., Publishers M. & S. Press.

Stockton, April 8th, 1869.

Messrs. Dewey & Co.:—Your favor of the 6th inst., accompanying patent for improvement in horse shoes, is received. I beg you will accept the earnest assurance of my gratitude for your kind assistance and valuable services. Very truly yours, W. R. Watson.

Contents of Our Illustrated Patent Circular.

[SENT FREE ON APPLICATION.]

Advancing Cases; Advantages, Important; Assignments, Forms, Cost, etc.; Caveats of what they Consist, Form of, Cost, how Filed effectively; Cost of Obtaining Patents; Confidential Advice; Copies of Patents Assignments, etc.; Copyrights; Dangers of Delay; Designs, Patents for; Engravings and Illustrations; Engine, Condensing-Beam—Illustrated; Extension of Patents; Foreign Patents—all Countries; For ign Inventors; Hints to Inventors; Government Fe s, List of; Home Counsel; How to Obtain Patents—Steps Necessary; Hydrostatic Press—Illustrated; Interferences; Influence at Washington; Laws (U. S.) and Decisions Relating to Patents; Lathe, Engine—Illustrated; Letters Patent—of what they Consist; Library, Reports, Law Books; Locomotive Engine—Illustrated; Medicines or Compounds, Patent for; Mechanical Movements—Illustrated; Mining and Scientific Press Office; Processes, Patents for; Record of Pacific Coast Patents; Reissues; Rejections—Cause and Remedy; Reports of Patent Office; Rights and Privileges of Inventors and Patentees; Saving of Time; Self-evident Facts; Selling Patent Rights; Springs, Various Kinds—Illustrated; Stamp Battery, Quartz—Illustrated; Telegraph, Patent Business by; Unsuccessful Applicants; Who can Obtain Letters Patents; What Claims can be Patented; Worthless Patents, Candid Reasoning.

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Allowed on Six Months' Deposits by the California Building, Loan and Savings Bank, California street, one door from Sansome.

Thomas Mooney, President.

August 2, 1869. ov19-1m

Returned.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.

10v18 6m B. F. Howland.

Co-Operative Union Store.—This is becoming one of the most useful Institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco. 21v18-4w

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling Druit, Lee, Parker, Acton, Aitken Churchill, Ricord, Velpeau, Beech, Sperino, and Dewliz Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3in

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores, Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat,**

Sudden Colds,

Coughs, Etc.

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

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We have long known the high character of the Pain Killer, and that it is used with great success and satisfaction in our best families. It is the favorite medicine of our missionaries in heathen lands, where they use it more than all else together for the diseases that abound in those warm climates. It should be kept in every house, in readiness for sudden attacks of sickness.—*Chr. Press.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

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New Advertisements.

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Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Leviathan.—*Miner*, Sept. 18th: Prof. Rickard will at once erect a smelting furnace at this mine. At least the thing so long talked of in Alpine will be tried. It is said that 1,000 tons of Leviathan ore will be immediately shipped to England.

The *Chronicle* says: The Leviathan smelting works are to be capable of reducing six tons of ore per diem, and it is the intention of Mr. Rickard to have them in operation in six weeks. From appearances we judge that thie, the last claim started in our county, will be the first to remunerate its owners.

Tarshish.—*Miner*, 18th: Mr. Schwerin, Resident Director, returned on Wednesday and has a gang of men taking the water out of the shaft preparatory to resumption of work.

Good looking sulphurets in the Globe Tunnel....Tunnel No. 3 of M. C. M. Co. is driving in at a satisfactory rate.

AMADOR COUNTY.

Casco.—*Ledger*, 25th: We learn that a flattering prospect has been struck in the Casco mine.

More Quartz.—The Marklee claim and Cuneo & Co's near Foster's ranch, five milee from Volcano, are giving good prospects. A crushing of several tons of ore from the Marklee yielded $50 per ton. Another claim on Sutter Creek, four miles above Volcano, is giving an excellent show of gold and sulphurets.

CALAVERAS COUNTY.

Palomo.—*Chronicle*, 25th: The company are sinking with better prospects than ever; the mill and hoisting apparatus working to satisfaction. Alexander & Co. are erecting new hoisting works and expect to have them running in a few days. The mill is running day and night. We have seen some rock bronght in by Andrew McFadden, as rich as ever was found in the county.

Mining Items.—The claims on the Central Hill channel pay largely. That of Jackson & Co. worked through an incline, is paying from $8 to $10 per day to the hand. The next claim on the same lead is Harkins & Co's. The gravel bas averaged $9 to the car load, or $30 per day to the man. Adjoining on the north, is the Pellaton & Co. claim. The owners expect to be taking out gravel in a short time. Next to this are Porter & Co., who are making fair wages. The Paul claim are in good dirt. At present they are making preparations to commence breasting out. The Golden Gate claim is doing better than ever. Shaw's hydraulic is in active operation. Brackett & Co. have partially suspended.

INYO COUNTY.

Lone Pine.—A correspondent writes from this place, Sept. 13th: A new quartz mill has been erected withiu a mile from here, and will operate on Cerro Gordo ore during the present month.

MARIPOSA COUNTY.

Coulterville.—*Gazette*, 24th: Douglass & Co. have commenced operations on the Mary Harrison quartz vein. They are sinkiug a shaft. Ralph Jones is working his vein on the Melvina, with every prospect of success. He has a large quantity of rock out and only awaits rain to commence crushing.

NEVADA COUNTY.

Mining Items.—Grass Valley *Union*, 21st: A lump of retorted gold worth over $1,500, came into Findley & Co's bank yesterday, from the John Bright mine; and the Mutual, of Graniteville, seuds down $1,800 worth of gold, crushed out within a month with a 5-stamp mill. The leading mines are being worked with their usual results. There have becu lately made some loeations of deep diggings in the hill north of Squirrel Creek. The company havo found prospects, indicating an ancient river channel. Preparations are being made to work these diggings tbis winter. The Brown Bros., on Squirrel Creek, are preparing to do extensive washing as soon as water comes. They have ground enough to last them several years.

Wisconsin Mine.—Same of 23d: The new mill will be ready for crushing in two weeks. The ledgo shows improvemeut in size and appearauce.

Allison Ranch.—Same of 24th: The work of resetting the engine and putting in the big pump has been completed, and the mine is nearly drained. Work has been commenced in the old drifts, and excellent

Suspended.—*National*, 26th: One of the large flumes on the line of tbe ditch, near Eureka, is being repaired. In consequence, mining operations are for a time suspended at Relief Hill and some other places.

Quartz Discovery.—*Gazette*, 22d: Johnson and others have discovered a promising quartz vein this side of Willow Valley. They have taken out six or eight tons of rock and will test it by mill process.

Kansas Claim.—Same of 27th: The machinery has been removed and put up at the point selected for a permanent shaft, and the workmen will commence sinking to-day. The shaft will be three by eight feet, containing three compartments, two of which will be used for hoisting and one for pumping. The purpose is to employ three shifts, and perhaps two months will be required to reach the bedrock.

Mining Matters.—*Transcript*, 26th: In gravel, the prospect obtained by Allen, on Selby Hill, is encouraging, and it is rumored that work is to be resumed on the Harmony ground. The San José Co. adjoining Marselus and Maltmau's, have struck good gravel. As soon as water can be obtained, work will be resumed upon the Birchfield claims. At the Cascades, on Deer Creek, extensive preparations are being made for hydraulic work. The large companies working at Blue Tent will do a great deal of work. On the ridge south of the Banner, partiee are engaged in preparations for opening gravel claims.

In quartz mining the prospects are good. On Rush Creek and Wood's Ravine parties are prospecting. The Mount Auburn Co. has taken out 30 or 40 tons of excellent rock, and the ledge is from two to three feet tbick. The old Vigilance will soon have a mill erected. The Banner Co. is obtaining some first rate rock, and exceedingly rich rock has been struck in the Pittsburg. The prospect in the county is better than for many years, at this season.

PLUMAS COUNTY.

Black Hawk.—Occasional correspondence of the Quiucy *National*, Sept. 18th: "The lodes being opened by Dr. Coleman give promise of being the most important development in the State. There are fifteen ledges, located separately, under different names, and collectively as the 'California,' all located under the act of Congress, July 26, 1866, and claimed as one lode, as all are within the same casings 800 feet apart. The lode has been traced almost the entire distanco (3,000 feet). The richest quartz was taken from the 'Eilen Tremaine,' $83 50 from ten pouuds of rock. The 'Coleman' has produced rock that paid upwards of ten dollars a pound by band mortar. A tunnel is now being run along the 'Coleman' and one hundred tons of quartz have been taken out during the last five weeks, which at the *lowest estimate* will pay $25 per ton. The exteusion both north and south are taken up by experienced quartz men. Ahove the ledges no gold has ever been found, whilc in them and below almost fabulous sums have been taken out. During the past year the Black Hawk Co., working four men, (only abont seven months), have taken out upwards of $20,000 of *exactly similar* gold to that now taken from the ledge. There is an abundance of watcr, and a mill can be placed at the watef level on the ledge, with a full face of quartz five huudred feet high. There is an inexhaustihle amount of timber on the ledge; climate unequalled; good wagon road from Quincy. Nothing is wanted save a good mill. No furnaces, pans, or other extras will be needed, as no 'rebellious ores' are to be found."

The *National* adds: "Ou Thnrsday last we made a visit to the mine, and although we concede the above account somewhat highly drawn; yet we must say that Dr. Coleman has made the discovery of a very rich quartz vein. We should like very much to have the privilege of workiug some of the rock which we saw with a hand mortar, and take tue proceeds for our pay."

Carriboo.—Letter to same: Messrs. Lind, Jouos & Lineheart, at Stag Bar, have reached the bed-rock, and are getting fair prospects. Mr. Jo. Buffington, continues running his tunnel for the Wild-Cat channel. Lamb & Jobns continue to work their claim in the upper channel, and are making good wages. There is talk of bringing water on that channel. Should this he done, they will have one of the best claims in the county. Thompson & Mather in the Wild-Cat channel are doing well. They have a largo amount of grouud prospected that will average ½oz. per day to the man. Jo. Hickman, iu the lower cbaunel, is stripping a large piece of ground. Thos. Orton, adjoining Mr. Hickman, is making ½oz. per day to the man. Brewer, Dotta & Co. have been very unfortunate in

SAN BERNARDINO COUNTY.

The New Mines.—*Guardian*, 18th: Many of our citizens have taken the fever and gone to the placers. They are about 30 miles from this place, near the top of Lytle Creek, or Cocomungo Monntain. Whether extensive cannot as yet be told; only one gulch having been found, beside the first, that will pay good wages. The locality is destitute of vegetation other than a dense body of pine timber, and water is very scarce, but one company having enough to mine with. The gold is very coarse, varying from 12½ cents to *chispas* that weigh forty, fifty, and sixty dollars.

SIERRA COUNTY.

Wehee.—*Messenger*, 25th: We have been shown by Mr. Wehee some fine looking rock from his ledge, on the North Fork. It shows free gold and black sulphurets abuudantly.

SISKIYOU COUNTY.

Quartz Mill.—Yreka *Union*, 25th: The Scott Valley company will have their mill completed in ten days. They are taking from their ledge a large amount of quartz.

Black Bear.—Wo learn that this company on Salmon are running tbeir mill day and night and crushing better rock now than ever before.

Big Valley.—We learn that a great excitement prevails in relation to a reported discovery of rich miues in the mountains twenty miles south of the eettlement on Ash Creek. Nearly everybody had gone to the mines. It was reported that two quartz ledges had been discovered, one rich in gold and the other silver, and between the two a vein of coal.

TRINITY COUNTY.

Canyon Creek.—*Journal*, 25th: A gentleman from San Francisco has been prospecting on Cañon creck. Ten cents has been extracted from one pound of the rock.

Weaver Creek.—The Weaver Creek Fluming Company are pusbing the work on with energy. They have put in between thirty and forty boxes this season, and are progressing at the rate of one a day.

New Diggings.—Last week a Frenchman brought into town nine ounces of heavy and fine looking gold dust, obtained by him on Stewart's fork of Trinity river. Several have gone to prospect in that section, and there are indications that the diggings are extensive.

TUOLUMNE COUNTY.

Confidence.—Sonora *Democrat*, 25th: This company made another clean up last Sunday after crushing 190 tons of ore which produced 390 ounces of retorted gold worth in value more than $7,000. The ledge is from three to four feet in thickness.

Arizona.

Prospecting Parties.—Prescott *Miner*, 11th: During the week two partics of men left Prescott and started out into the wilderness to hunt for gold. One led by Cal. Jackson, 29 in all, goes to prospect the country east of tbe Verdc, and south of the Mogollone range of monntains. This party started on the morning of the 8th. The other went nortb, intending to prospect the Little Colorodo and its tributaries. The Captain is S. C. Miller. This party, 23 in all, are led by experienced men.

Mining.—We have nothing new regarding mines and mining, this week. The lodes now being developed are looking well. All the mills are idle, waiting for water.

The San Diego *Union* of the 22d, says: We have the following from our correspondent: "The San Francisco prospecting party of which I wrote you, returned to-day and brought 15 pounds of ore which was melted with blow pipes and found to be more than half silver. You never saw such an excitement in the place before. Everybody talks mines and some are almost crazy on the subject. There is no humbug about it, for I assure you it is the richest thing on record. A large party in company with the discoverers left town this morning for the mino in order to take up extensions."

Idaho.

Ida Ellmore.—Owyhee *Avalanche*, Sept. 10th: Looks better than ever. The lode has been gradually widening. The shaft is down 60 feet below the third level.

Golden Chariot.—The shaft is within ten feet of the point at which a new level is to be formed, which will be 350 feet from the surface.

Red Jacket.—They have commenced a level at the bottom of the shaft, which is now 80 feet deep in both dirccticns. There is quite a pile of ore on the dump, and some of it is exceedingly rich.

Poorman.—A lead two feet wide, was

fect from the shaft. Tbe ore looks well.

Empire.—The sbaft is 40 feet deep, and a large heap of fine looking rock is lying at the mouth of the sbaft, which will be crushed soon at the Webfoot mill.

Allison.—Work is still progressing. The Home Resort owners have a large double shaft sunk on tbeir mine to a depth of 30 feet, and have commenced drifting at that point. Tbe lead is well defined, 2½ feet wide, and in much of the ore free gold is visible.

Slate Creek.—Sinclair, Sands and Co. are working their placer claims. They are down several feet, but bave failed to reach bed-rock yet. Mr. Sinclair thinks tbese placers will pay from four to five dollars per day.

Loon Creek.—Boise City *Statesman*, 18th: Judge McBride returned yesterday. At Oro Grande when he went there the only currency was greenbacks, but when he left dust was coming into circulation. A good many are coming in from Lemhi and Montana, and most of them stay.

Nugget from Loon Creek.—Knapp, expressman, arrived at Idaho night before last. He exhibits a nugget worth thirty-eight dollars, from one of the cañon claims.

From Loon Creek.—Same of 23d: Mr. A. A. Revere just returned from Oro Grande. Whcu he left it was reported that good prospects bad beeu found fifteen miles south on Yankee river. Three dollars to the pan has been taken out. A report had also come from Long Creek forty miles east by north. Good half ounce diggings were reported from there, and at the time Mr. Revere left Oro Grande, from one hnndred to onc hundred and fifty men had started for that place. Provisions at Loon Creek were becoming scarce and high, thongh he met several trains going in. Several companies had joined together for the purpose of sending out after their winter supplies.

A Counterblast.—Hamilton *Empire*, 22d: Joe Lncket writes to Mr. Sweeney, of this city, from Idaho City, under date of the 10th instant, as follows: "I have just returned from the new diggings on Little Salmon river, perfectly satisfied. Nearly all of the boys from this place have got back. It is a little one-horse camp, gobbled up by meu from Lemhi. It ie nothing but a littlc creek with small bars, and hut few of them pay. Bill Stephens and a lot of the boys from Rocky Bar have also returned."

Montana.

Basin Gulch.—Helena *Gazette*, 16th: John Ryan informs us that ten days ago a nugget weighing 1½ pounds avoirdupois was taken out of Skimerborn & Co's claim. Water is ecarce, but the pay is $30 per day to the hand; one man washed out $500 in six weeks.

Blackfoot.—Chas. Simmons informs us that mining is pretty much at a stand-still, owing to tho scarcity of water.

Nelson Gulch.—Dahler & Truett have surveyed eighteen miles of the contemplated ditch. It will be twenty-five miles long, and will be supplied with water from Beaver creek, at the head of Ten Mile.

A Stampede.—*New Northwest*, 17th: Quite a stampede has heen going on from Deer Lodge to Dry Cottonwood. The gulch is eight miles above town; the discovery six or eight miles up the gulch. The ground prospects 20 and 50 cents to the pan; some 50 or 60 claims have been takeu up. The ground is from eight to ten feet deep.

Peterson Gulch.—There are 20 or 30 men openiug claims, although there is no water. The gulch is narrow; bed-rock four to six feet with boulders occasionally, and prospects from 2 to 25 cents to the pan although as high as $1 has been panned. Tbe water of the gulch is taken out above for Caraboo. A few days since the Stuart Brothers and others purchased the Lucas and the Lawson & Alport ditches; will bring the water to their ground at a height of 60 or 70 feet, enabling them to hydraulic the gulch and bars. These ditches have a capacity of 700 inches. We expect to see 200 men employed in Peterson gulch next summer.

New Gulch near Butte.—From Mr. Gilchrist we learn that a stampede occnrred on Tuesday to a gulch 2½ milee west of Butte City. John Philips took $1 to the pan from discovery, and washed $18 from three small wheelbarrows of dirt. The ground is only 15 inches deep, but increases in other parts of the gulch, which is three miles long, to five feet. Parties are working with rockers using spring water.

Nevada.

COPE DISTRICT.

Argenta.—Elko *Independent*, 25th: Col. Denver had nine tons of ore from the Ar-

tho value of the pulp was $450 a ton. After crushing, the pulp was shipped to Swansea for treatment, and 85 per cent. of the assayed value advanced to tho owners.

Mountain City.—*Empire* of 25th gives this extract from a private letter dated 15th: "Every one is rich here in prospective. The float rock is certainly very rich. Some of the ledges are valuable property. The hillsides and most of the gulches contain gold. I have seen from the color up to four or five cents to the pan washed out. Lots in this town range from $300 to $1,000. There is a 10-stamp mill now on the road for this place.

ESMERALDA.

Pine Grove.—*Aurora* letter, 16th: The Wheeler mine has been worked with favorable results. In the upper level the ledge is four to eight feet wide; the rock pays $80 per ton, and growing richer. They are working a 10-stamp mill, and the mine has paid $15,000 to $18,000 per month. The Wilson mine pays regularly from $18,000 to $20,000 per month. The Kean, containing 1,000 feet, is rich. John Wheeler is putting up a 10-stamp mill.

MINERAL HILL DISTRICT.

The Locality.—The Grass Valley *Union* gives part of a letter from G. Y. Dorsey, Sept. 22d, defining the position of Mineral City. He says: "This place is south of Cope and about 150 miles from it. Cope District is north of the railroad, and Mineral Hill District is about 50 miles south of the railrord." Mr. D. adds: "This is the richest district in the State of Nevada. The mineral is rich beyond any doubt, and there is plenty of it. Mineral City is in a pleasant valley, at the foot of Mineral Hill. There are between 300 and 400 men now in the camp. At this time houses are going up in every direction, and everything is lively. There is plenty of good water and any amount of wood at hand. One of our companies shipped to Austin 25 tons of rock, paid $40 per ton for hauling, and received $22,000 over and above all expenses in return. This is an example of what our ore can do."

The *Reveille* of 20th says: We saw persone who arrived from Mineral Hill on Saturday, all of whom agree in the opinion that it contains a valuable deposit of ore. The most important property is owned by the discovery company. The ore reduced is hauled to this city at present, but it is only the high grades that will bear the expense. We were informed that no discoveries of ore have been made outside of the small hill from which the district received its name.

Live Yankee.—The correspondent of the San Francisco *Herald* writes, 19th: "The whole top of the hill appears to be a body of rich silver ore, containing just base metal enough to spoil it for working it by wet process. At the Live Yankee they are sacking ore worth $2,000 per ton, and they estimated the second class to be worth $300. There has been $6,000 worth of float ore picked up on the side of the hill, hauled to Austin at an expense of $35 per ton for freight. The mills charge $35 more for working, and guarantee a return of 85 per cent."

REESE RIVER.

Annie Angie.—*Reveille*, 23d: One week ago Joseph May and John Moitt discovered in Marsball Cañon, two miles south of this city, a fissure vein, three feet wide. At the surface the pay streak or stratum, was one foot thick. They carried specimens to the Manhattan mill, a test of which disclosed silver at the rate of $238.93 to the ton. They have named the discovery Annie Angie.

Spring Valley.—Letter to same, Sept. 20th, from this district, says: "There are 25 or 30 men here taking out pay ore, the grade of which is generally high. The Reese and Berry owners are working in the croppings, from which they have made good shipments to Austin. The Mayot shows pockets of born silver equal to the best in White Pine. The Grant, Red, White and Blue, Five-Twenty, Specie Payment, Frisco, Providence and Murray, and many others, show good ore."

Rich.—Same date: A lot of 2,500 lbs. of ore, brought to this city from Spring Valley District for reduction at the Mettacom mill, netted the owner $964 in gold. The assay of the pulp of 600 lbs. of the small lot yielded at the rate of $1,700 per ton.

WASHOE.

Occidental.—*Enterprise*, 26th: The new tunnel is progressing favorably in picking rock,—is now in between 1,100 and 1,200 ft., and will have to be driven 75 ft. further before striking the lead.

Lady Bryan.—The company start their new mill to-day. They have out and on hand 700 tons of ore that will mill at least $40 per ton. The ore is from the 90-foot level and all the way up to the surface. They are taking out 50 tons per day.

Ophir.—The company have got their air pipe in position and their new blower works to perfection. To the bottom of the main shaft—700 ft.—the tubing is of wood, one foot square in the clear, thence to the end of the drift—650 ft.—of sheet iron tubes 10 inches in diameter.

Virginia Consolidated.—The shaft was down 305 ft. last evening. It is in very hard blasting rock. They are making as good progress as could be expected. Next Monday they will shut down for the purpose of putting in a new pinion wheel.

Gould & Curry.—The company are drifting north and south from the bottom of the Bonner shaft, 1,185 ft. deep. Two days since they made the connection between the 100-ft. level and the second station, 425 ft. below the surface. This gives the workmen an ample supply of good air. They are extracting 40 tons per day of ore, that assays $48 per ton, most of it from the 100-ft. level

Belcher.—The Belcher Co. are taking out from 20 to 25 tons per day of good ore. They yesterday morning began shipping ore to the Kolsey mill.

Walker's Defeat.—Work is to be resumed on this old mine above Devil's Gate. Some assays lately made of ores have gone as high as $400 per ton, principally gold. Of course poorer rock could be found in the mine by hunting for it.

Overman.—The prospects seem to be brightening. They are taking out from 25 to 30 tons of good ore, with good indications of new deposits.

Yellow Jacket.—The south shaft of the Yellow Jacket is yielding 175 to 180 tons of good milling ore per day, and the north shaft is being put in shape for work.

WHITE PINE.

Weekly Mining Review.—*News*, 25th: Everybody is getting out ore and sending it to the mills, and the latter are running to their full capacity. A large number of our mines show improved prospects as they are being developed, and all continue to yield as good ore as at any former time, and in increased quantities as room is made for more men. Much more work is being done also in prospecting and developing unproductive claims than one would expect, considering the extreme scarcity of money.

Bullion.—Following is the statement of the total shipments of White Pine bullion, for the figures of which we are indebted to W. C. Child, of W., F. & Co. The shipments run through from Sept. 15, 1868, to Sept. 15, 1869:

From Shermantown	$352,829.22
From Newark	106,238.54
From Treasure City	526,891.93
From Hamilton	1,511,198.25
From Austin (White Pine Bullion)	533,059.85
Total	$3,030,217.74
By other channels	125,000.60
	$3,155,217.74

The figures for the shipments by other channels are of course an estimate. It is probable that actual figures, correctly got, would exceed the estimate.

In remarking upon the above showing, the *News* says: "These statistics tell a story that has never been told of any other silver mines in America. We have not the data to ascertain the average number of stamps employed in the production of that amount, but we think it would not exceed fifty. Over $50,000 to the stamp per annum is without a parallel. * * * At the same rate of production with that of the past year, the yield next year should be $18,000,000. No account has been made of the product of our smelting furnaces, which are rapidly growing in favor and increasing in number."

Items.—*Empire*, 22d: Maggie Consolidated is daily improving in appearance. A large amount of smeltiog ore is being obtained.... An important strike was made in the Edgar shaft yesterday. Some good ore was developed at a depth of 70 feet, and the strike goes to establish the continuity of ore between the Earl and Hidden Treasure....23d: The California Company yesterday suspended the work of sinking for water to supply the Stanford mill, and will commence laying pipes from the Water Company's works....24th: The Earl is yielding fifty tons of high grade ore daily. ....*News*, 25th: Consolidated Chloride Flat sends 50 tons to mill daily....Cerro Pasco ore milled $165 per ton....Hidden Treasure shows exposed an immense mass of ore ....Manhattan is finding large bodies of good ore....Ora Dell is taking out some fine ore; a streak, nearly a foot thick, of very rich chlorides, has appeared in the south drift....Pogonip & Othello has 21 men employed; a quantity of ore is sent to mill daily....Tom Paine keeps a pack train constantly running with ore to mill; vein 15 feet; ore of high grade throughout.

Mills.—*Empire*, 21st: Dayton mill will start up about the 1st proximo on rock from the Original Hidden Treasure.... Miller's mill is crushing ore from the Sagebrush mine on Treasure Hill....22d: Stanford mill will steam up for a trial to-morrow, and about the last of the week will go into active operation.....Martin & Co's mill, in Patterson district, which went into operation last Monday, is said to work like a charm.. ..*News*, 21st: In Treglown's mill the frame is all up, the machinery on the ground, and will be in operation in two weeks.

Lead Bullion.—*Empire*, 25th; We were yesterday shown another fine lot of bullion smelted by W. T. E. Prichard, at his furnace in Swansea, from ores taken from the Maria Louisa, Roschud and Big Sunflower claims, owned by Mr. Sublett and others. The value of the bullion is over $200 per ton.

Oregon.

Canyon City.—Cor. of Dalles *Mountaineer*, Sept. 17th: In the mines but little is doing, on account of the scarcity of water. Canon creek is the only stream that has held out, and in it the water has been limited, more so than any previous season; yet the prospect for a good run this fall is quite flattering. There is some prospect of a bed-rock flume in Cañon creek, which will give an outlet for many valuable claims, and furnish employment for hundreds of men. The quartz mill at Marysville is pounding away with good results. The mills on Elk will start next week.

The "Portland Oregonian."—Since railroad and telegraph extensions to the north are beginning to assume the status of facts accomplished, the great empire of the Columbia, the Wallamette and Puget Sound—which is destined some day to weigh as in a balance against California—has attracted more of its merited attention; and papers from that region, such as the *Oregonian* of Portland, appear to us surprisingly well edited, and metropolitan looking with compactness and fullness of news, for a region that has not yet claimed to be itself the very center of the world. Doubtless there are the epokes now being made for a veritable hub in that region; but Oregon is as yet like a modest boy, in the lustiness of his growth. There is to be found in the Portland *Weekly Oregonian* as much news of manufacturing, engineering and the like substantial developments, as there is in any California weekly that could be mentioned, except the Mining and Scientific Press. Oregon has trees enough to insure a healthy growth of soul in its population; and summer showers when we are parching, unless we go rusticating to Lake Tahoe. Humboldt said the future great center of the world's civilization would be within five hundred miles of San Francisco Bay. It seems he could not determine in his own mind between California and Oregon.

Hucks' & Lambert's Axle Grease.—Hucks & Lambert make the usual display of their well known lubricating material. One of the peculiarities of this preparation is the fact that while it continues at nearly the consistency of cream, at ordinary temperatures, it does not yield to the action of heat, so as to liquefy, until the temperature is raised to about 200° Fah. It will not "run" in the hottest sun; hence its peculiar adaptability as an axle grease for cog-wheels and for lubricating journals, which are liable, from over-pressure or great speed, to become heated. This preparation is produced by a chemical combination of suitable oily substances, purified by distillation, and carefully freed from the resinous or pitchy matter which is found to a greater or less extent in all oils in their natural state, and which, if allowed to pass into the lubricating material, causes gumming and other hindrances to lubrication.

Adolph Sutro broke ground Sept. 27th for the deep tunnel which is to tap the Comstock lode at Virginia City. It is to reach the Comstock lode in a distance of 20,178 feet, and cut the vein at a perpendicular depth of 1,822 feet, or at a depth of 2,900 below the old office of the Gould & Curry.

Mr. Seward says Alaska is an honest climate, for it makes no pretensions to constancy.

Paddle Your Own Canoe.—Judge S. gave his son a thousand dollars, telling him to go to college and graduate. The son returned at the end of the Freshmen year without a dollar and with several ugly habits. About the close of the vacation the Judge said to his son: "Well, William, are you going to college this year?"

"Have no money, father."

"But I gave you a thousand dollars to graduate on."

"It's all gone, father."

"Very well, my son; it was all I could give you. You can't stay here; you must now pay your own way in the world."

A new light broke in upon the vision of the astonished young man. He accommodated himself to the situation; he left home, made his way to college, graduated at the head of his class, studied law, became Governor of the State of New York, entered the Cabinet of the President of the United States, and has made a record for himself that will not soon die, being none other than William H. Seward.

Piston Packing.—The water-packing patent exhibited by Mr. J. L. Constable, the chief engineer of the Institute Fair, has attracted attention, and received favorable comment from engineers for its simplicity. It is, in fact, no packing at all, but a series of grooves around the periphery of the piston, into which the steam forces itself, there condensing, and the water thereupon forming a perfect steam packing. It is the invention of Peter Poillen, and is a case where a mere idea, and nothing besides, proves to be a complete substitute for all the friction metals and costly appliances that have been attempted at so great a cost, for the purpose of securing a perfect piston packing.

A successful California miner who has just returned from a visit to his native place in New Hampshire, reports that there is much more difficulty there in finding help on the farms and in the interior, than is the case here—so many have left for Massachusetts, where manufacturing is carried on more extensively, and for the West. Young men do not, however, find the circumstances of the country such as to make it easy for them to "get a start" in the world. The chances to "get a start" are much more favorable in the Mississippi Valley or in California.

Whole-souled.—A new machine for cutting out the soles of shoes, may be seen at the Vulcan forges and machine shop on Howard street, near Beale, the invention of L. P. Garcin, the proprietor. It appears to work like a charm, a whole sole being cut at every turn of the machine by a single drop of the knife. The soles are turned out nearly as fast as the leather can be fed.

The seals did not stomach the Pacific Railroad. Five of them died, out of grief and venation, as soon as they came in sight of the cars, at the mere idea of traveling "the plains across," and looking for so many days out of the windows at the alkali flats. We have not heard of the like upon the Chinamen.

A Newspaper Runner.—One of the proprietors of the Sacramento *Bee* has been running ever since the Pacific Railroad was completed, and writing letters about running away; and now he has commenced writing about running back again. He's a mighty long-winded runner.

The great cask of Fulda & Co's California Wine Cooperage, Battery and Broadway, has made its appearance in the Fair. It holds 4,165 gallons.

The Schnell farm dwindles down to *eight* Japanese, four men and four women. Out of several million tea seeds sown, only 130 growing plants have resulted, but it is thought that the possibility of raising good tea in California will be demonstrated.

Next Monday, at 10 A. M., the State University at Oakland is to be inaugurated by addresses from Horatio Stebbins and others.

Self-Conceited.—Mrs. Stowe in a recent speech said: "Sins against taste are never pardoned. They bring nothing but loathing and disgust toward the whole subject; and you cannot reason with what disgusts."

The more a woman's waist is shaped like an hour glass the more it shows us that her sands of life are running out.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

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San Francisco:
Saturday Morning, Oct. 2, 1869.

From the Arctic.—A telegram from St. John, N. B., dated Sept. 27th, is as follows: "The expedition of Dr. Hayes and Bradford, the artist, has returned from the Arctic regions. They were entirely successful in every object. All well. They penetrated the middle ice in which the British whaler Alexander was crushed and lost." A New Bedford dispatch of same date says: "Dr. C. F. Hall, with Eibernburg and Loo Koolita, two Esquimaux and three daughters, arrived yesterday on the ship Ansel Gibbs, from Repulse Bay, Aug. 23d. Dr. Hall brings, as the results of his five years residence in the Arctic regions, interesting intelligence regarding the death of Sir John Franklin and company, and proof that none of them ever reached Moutreal Island."

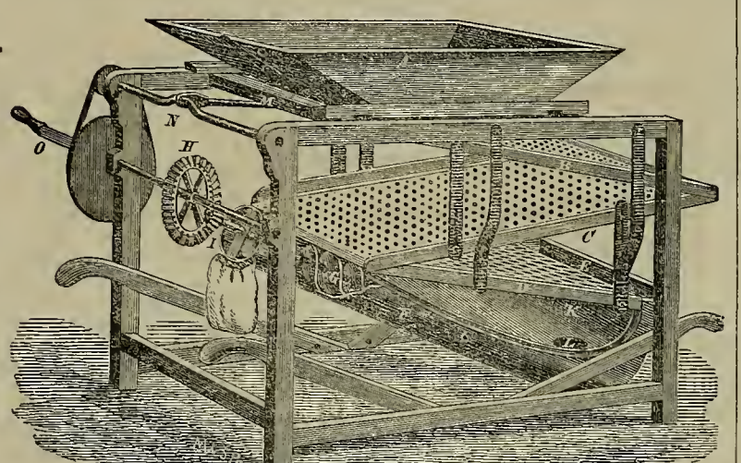
Mining and Metallurgical Statistics. We have sent to our subscribers in certain portions of the State, not otherwise provided for, blanks prepared by Mr. Raymond, the U. S. Mining Commissioner, which explain themselves, and which we hope will be promptly filled with a cheerful bestowal of such an amount of labor as may be required, and returned to us speedily, to be forwarded to Mr. Raymond, at Washington, for incorporation in his report. The results will be of great direct value and importance to the regions represented.

Chinese Portrait Painting.—A portrait of a San Francisco young lady, painted by Soy Lang, of Hongkong, after a photograph, shown in the Fair Art Gallery, is a good sample of Chinese skill and taste. In execution, color and tone, it is excellent; there is wanting, however, the same living element in the canvas which characterizes the ordinary photograph, and which can only be represented by the exercise of thought. There are few sign painters in San Francisco who could compete with Soy Lang. With proper schooling, we do not see why such artists of the Mongolian realm should not even excel amongst Caucasians.

A Patent Lifter and household tool of great merit can be seen on exhibition in the culinary department at the Fair. It is about the size of a stove-lid lifter, only a little heavier. It is very convenient for lifting hot dishes, pots, lids, etc., about a stove, and is also a complete carpet tool, stretcher, hammer and pincers; while it can be used for cracking nuts and for many other purposes. We rarely see so many merits combined in a little article sold for our bits.

Improved Grain Cleaner and Bluestone Mixer.

This device, of which we give an illustration to-day, is the invention of Mr. John W. Clark, and is designed to assist materially in the preparation of seed wheat. One of the worst difficulties to be encountered in sowing grain is the intermixing of barley, mustard and poor wheat, together with short straw and chaff, which latter would clog the seed-sower if allowed to remain. Much time and inventive talent have been expended to perfect some machine which should effectually separate the good wheat from these foreign substances. The present device accomplishes this by a simple arrangement of inclined screens, the upper one *(B)* of which receives the grain from a hopper, *A*, and a shaking motion being given to the screen, the wheat passes through, while most of the chaff, barley and larger substances are discharged from the lower end of the screen. A similar action occurs on the next screen, *C*, which is inclined in an opposite direction from *B*. From the screen *C* the grain passes to the fine screen *D*, which retains all the wheat, but discharges the mustard, cut wheat and cheat into an inclined hopper, *K*, from which it passes through an opening, *L*, to proper receptacles. The cleaned grain is passed from the screen *D* to a hopper, *E*, which carries it to the lower end of an inclined cylinder, *F*, which contains a solution of sulphate of copper, or "bluestone," as it is termed. This solution is for the purpose of preventing the attack of worms upon the seed, and for otherwise promoting the more vigorous growth of the wheat. The grain is thoroughly mixed with the solution; after which it is elevated to the mouth of the cylinder by a screen, *G*, which turns in the cylinder, and is operated by bevel gears, *H* and *I*. A sack is hung to the mouth of the cylinder, and receives the grain, which is freed of any superfluous moisture in its passage up the cylinder.



CLARK'S IMPROVED GRAIN-CLEANER AND BLUESTONE MIXER.

This machine is very simple and inexpensive, doing its work thoroughly; and we bespeak for it the attention of all farmers. One of these machines can be seen in the present Mechanics' Fair, where the inventor will give any information required. He may also be addressed at his residence, Hayward's, Alameda County, California.

Mr. Sutro's speech at Piper's Opera House, and the ground breaking ceremonies of the Sutro Tunnel at Corral Cañon, have afforded a lively subject for conversation at Virginia City, in which the newspapers generally speak encouragingly touching the enterprise, while a number, headed by the *Gold Hill News*, oppose and ridicule the present operation as futile. Mr. Sutro begins with $50,000 funds, subscribed by the Miners' Union of Virginia City.

Dull Times.

"Come again no more," sings the *Call*. The fact that everybody could raise the necessary cash pretty promptly on the last steamer day, is referred to as an evidence that the dull times in money and business are finally passing away. Such, we regret to say, is not the universal impression. On the contrary, though all the large and small craft have taken in their sail, months ago, the expectation is that this kind of weather will continue for a time, and that quite a number will be disabled. "The country is not large enough," we hear it urged; which means that the country is too large, and too little populated for the amount of business that is expected out of it. European and Asiatic emigration are canvassed, as incidental influences. We are in a transition state, and those who can read the times correctly, who will not go astray in regard to our proper destinies, will profit by their judgment. Often has it been said that "the mines are giving out," that the placers are exhausted in California. Amongst traders and money lenders, some of whom transact largely also in mining stocks, and amongst stock speculators pure and simple, we hear very frequently the opinion expressed that what we call honest mining will not pay.

The truth is that the entire country west of the Rocky Mountains is still dependent mainly upon the industry of mining. Our prosperity is exactly in the ratio of the gold, silver, lead, tin, quicksilver and coal mined and *brought to market*. Speculative placers and Montgomery street mining are entirely exhausted, and of course the surface placers of 1849 are exhausted; they were so ten years ago. Legitimate mining, with the proper skill, economy and intelligence, and metallurgical knowledge in proportion to the mining fields that are now well tested and found promising, is just begun, but is growing, and is that which will sustain and largely contribute to our prosperity for centuries to come.

To Mount Insects for the Microscope. Mounting small insects for the microscope, such as parasites and acari from birds, beetles, etc., may be performed by placing the live insect on the inside of a sheet of tolerably good note paper, folded, and when in the act of running, closing the paper and pressing it tightly in a book. By this means the legs and antennæ may be nicely extended, all the expressed moisture absorbed by the paper, and the skin left apparently unbroken. It should be allowed to remain in the book about two days, put in the turpentine bath, and afterward mounted in balsam in the usual way.

"Where is your father, bub?" said a gentleman to a ragged little boy. "He took a drop too much sir, and they put him in the ground," was the urchin's reply. He was hung.

Fairs, Everywhere.

An Industrial Exposition is a different thing from the ordinary ancient commercial fair, a kind of grand market-day which recurs periodically. The latter is instituted for the convenience of those who buy and sell, rather than for the advantage of manufacturers, inventors and producers, the fostering of general or special industries, by premiums and otherwise.

Trade fairs are as ancient and as universal as trade itself, but are rather oriental than Anglician in their style of business. We have our periodical book sales; but in corn, stocks and the like, modern commerce prefers to organize boards which serve as continuously existing fairs; while in common goods of the shops and stores, the oriental custom of holding fairs seems to be dispensed with by us. On continental Europe, however, the annual *Leipzig Messe*, and in Russia the great fair of Nijui Novgorod on the Volga, are kept up with religious regularity, and are as much a necessity to the people's method as advertising is with us.

Great times and occasions they are, for study of character, and for a comparison of various national characteristics; for from the most unvisited and uncorrupted nooks of the world and of civilization, come forth the living human fossils whereby we may classify the human species, and even read the history of our civilization back as far as a thousand years by the Rip Van Winkles that come to the light. These are good fields for beginnings in a science of human paleontology; as well as for a kindred science of caste-ology, for men are of many kinds differing mentally and morally from each other about as widely, it strikes one, as the grand scale of gradation between the lowest and the highest organisms in the physical world.

Glancing over the newspapers, we discover notices of fairs being held everywhere. The *Leipziger Messe* is even now on the tapis; many of the attendants in the Mechanics' Institute Pavilion have amused themselves in the midst of its curiosities, and learned to diognosticate the financial genius of Teutonic and Slavonian Jews. Nijni Novgorod is about winding up—of all places in the world for the study of caste the place worth visiting; for it is Asia, ancient and modern, and Europe, ancient and modern, in a state of the sublimest jumbled confusion, and jollity withal; Tartars, Mongols, Cossacks, Slavonians and Goths, including the genus Yankee, all showing on the surface the peculiar habits of feeling and thought of to-day, yet which reminds a spectator from the far West so much of the past, of an age ago.

Go over the Ural, or flit across the lands that Alexander conquered (when he thought he had it all), and rest in Thibet; everywhere you will notice that the people are holding annual fairs—seasons of brushing up and of jollification—even to the extreme highlands of the Asiatic continent, ten thousand feet above the sea, the fairs of which were so graphically described to us by Robert Schlagintweit in his recent visit to San Francisco.

The idea of the modern Industrial Fairs—of the World's Fairs and of Expositions Universelle—is born of Atlantic progress; and progress in what? In the exercise of the mighty powers of invention. As individuals, men are mere animals without tools; as nations, we are aborigines without inventions and machines; or we are absolute sovereigns, reigning in the midst of the physical forces of God's world.

The Mechanics' Institutes, dating from the beginning of the present century; the American Institute, now holding its thirty-eighth annual fair at Empire Rink, New York, and hosts of other similar institutions, were intended to cultivate and foster inventions for industrial progress—to facil-

itate and hasten the rewards for the successful meritorious inventor, even as to the smallest trifles that serve us a good purpose. We have learned what vast results can come from the simplest ideas of our every-day knowledge—as from the use of the expansiveness of steam. Without this feature in our fairs we would not be differing so much in our habits and ways, from the Tartars or the Persians of Nijin Novgorod.

There is in operation in this State since the 28th instant, besides the Stockton and Sonoma Fairs, the Upper Sacramento Agricultural Society's Fair at Chico; and there is in progress the New York State Agricultural (racing) Fair at Utica, with similar agricultural fairs in other States. From England we learn by official Government announcement that another grand World's Fair is to be held in 1870, at Kensington, where arrangements are being made for the erection of another great new exhibition building. From Peru, also, we learn that several hundred thousand dollars have been appropriated for an industrial and agricultural fair, to be held next year at Lima. Thus invention and civilization go marching forward hand in hand, and America glories ever in being at the front.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For the Week Ending September 16th.

Chimney.—Peter Portois,, San Francisco, Cal.

Water Closet Valve.—W. Smith, San Francisco, Cal.

Mechanical Power.—Addison Waterhouse, San Francisco, Cal.

Stamp Mill.—Rice & Vandern, Central City, Colorado.

Projectile.—Abiather F. Potter, Oakland, Cal.

Spring Seat for Vehicles.—Samuel S. Simmons, Watsonville, Santa Cruz Co., Cal.

New Incorporations.

Mohawk M. Co.—Gold Flat, Nevada County, Cal. Sept. 27th. Capital stock, $250,000; divided into 2,500 shares. Trustees: Joseph M. Maguire, C. C. Palmer and G. W. Downey.

Dutch Flat Gravel and Cement Co. Placer County, Cal. Sept. 29th. Capital stock, $400,000; divided into 4,000 shares. Trustees: William Watt, S. D. Bosworth, R. F. Morrow, J. S. Kennedy and Geo. W. Beaver.

North American Consolidated M. Co. White Pine. Sept. 30th. Capital stock, $2,000,000; divided into 20,000 shares. Trustees: J. F. Lewis, Thomas Wells, Jacob Bacon, J. A. Eaton, and G. R. Spinney.

Sewing Machine Manufacturing Co. The *Bulletin* announces that a company has been formed with a capital of $300,000, to manufacture sewing machines and needles.

Casala S. M. Co.—Sept. 25th. Trustees: J. Mora Moss, John Wright, Charles Meineicke, W. W. Arey, and Chas. Baum, Secretary.

Golden Sun M. Co.—Sept. 25th. Officers: President, S. Sheplar; Secretary, A. W. Chapia.

All Wrong.—An irresponsible item got mysteriously into our last number, describing Sloper's gas apparatus, (for the generating of illuminating gas with "sulphuric acid and iron filings, etc.), without the editor's revision or cognizance. The process being correctly described under its proper head in the Review of the Fair.

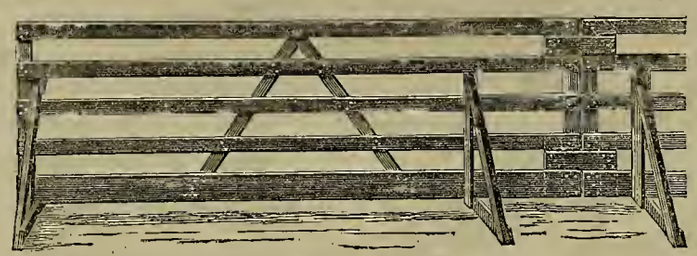
A Climatic Change is reported by an old trapper in the Rocky Mountains, who says that the winds there, now blow milder and damper than formerly, and the air is heavier. It has been observed also, that the rain falls more frequently in Utah and other portions of the Far West, and the rivers have increased in volume.—*Carson Appeal.*

We Hope he is Well Patronized.—A shoemaker on Kearny street, has a large sign over his store, on which is painted, "Good women's shoes made here."

Johnson's Patent Portable Fence.

Fences occupy no unimportant position in the industrial economy of a State. They are very expensive, and yet but few pay that attention to the questions they involve which their importance demands. Poor fences are great annoyances; they make breachy cattle, and keep the farmer constantly busy in repairing them. The manner of constructing them is almost indefinitely varied. Fences occupy and render useless, for production, a large portion of the area of a farm. There are but few who ever stop to make a calculation as to how much ground a fence occupies. The fence, as ordinarily constructed, around a six-acre field, will occupy nearly one entire acre. The fences on a farm of 160 acres, divided up into lots averaging six acres each, will cover over twenty acres of the area of such a farm. In the ordinary mode of fencing, the use of the land is not only lost, but the fence sides usually become a nursery of weeds, and greatly interfere with the plow.

In order to avoid some of these evils, the question of portable fences has been much considered, of late years, and great numbers of devices for such structures have been patented or suggested. The arguments in favor of portable fences are numerous. When properly constructed, they



Johnson's Patent Portable Fence—Fig. 1.

can be built cheaper than permanent ones; they can readily be moved from place to place, as desired, and no permanent loss is sustained in the product of the soil by means of their presence; and they never become nurseries of weeds.

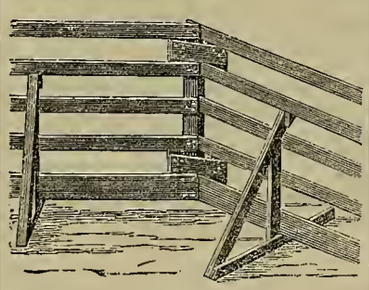


Fig. 2.

One of the best of this class of fences, which we have met with, is the one herewith illustrated, and which was patented, September 14th, 1869, through the Mining and Scientific Press Patent Agency. This fence can readily be taken to pieces or separated into panels. It can be built for about one-half the cost of an ordinary worm fence of the same height, with posts sunk in the ground; while the braces that support it make it amply firm and strong against either the inroads of cattle or the violence of winds. It can be placed along a side hill as well as on level ground; and it is claimed that three men can set up a mile of it in six hours. A model of this fence is shown at the office of the Fair Press, in the Mechanics' Pavilion, where the manner of its construction can be readily seen and its merits considered.

Referring to the engraving, the section, Figure 2, shows how the panels are held together; the ties are so constructed that the fence may be placed either in a straight line or bent into an angle at any panel. The brace on the right has been turned down, as is done in removing it from the fence. The braces upon Fig. 1, are in their proper position for supporting the fence. The act of removing or placing them is but the work of a moment; no hammer or other tool is necessary in setting up or taking down. The patentee will dispose of rights to build and use this fence through his agent, L. L. Sawyer, at the Pavilion, where any further information may be obtained.

The Mechanics' Institute and its Library.

It may be interesting to strangers visiting the city and the Pavilion, and to some others of our readers who may not be particularly posted in the matter, to learn something more than they may now know of the Society under whose auspices the present Industrial Exhibition is being given. The Mechanics' Institute of San Francisco was organized on the 29th of March, 1855. At the close of the first year it numbered only 92 who had paid their quarterly dues; while the library contained only 487 volumes. The Society had no building, or other property than its little nucleus of a library. Its first exhibition was given in May, 1857, which netted $2,678. From that small beginning the Institute has gradually increased to its present proportions and standard of usefulness.

Its library is now the most valuable on the Pacific Coast, in scientific and useful works, and is steadily growing in value. The number of volumes as per last quarterly report was 13,500 and additions are being made at the rate of 100 a month. The membership is not so large as it would be, if the merits of the Institution were more generally known; but the roll embraces 1,100 names, without counting life members, of whom there are about 70.

The Institute now owns the fine three story brick building occupied by the Association on Post street, subject to a mortgage, which, however, will be so materially reduced by the profits of the present exhibition, that the burden will not thereafter be felt. Besides the library hall, a large and fine room, the building comprises a commodious reading room, furnished with all the principal magazines and newspapers of the country, and a chess room, a most attractive place of resort for an evening.

Fully abreast of the requirements of the age, and in the best sense of the word, an eminently practical Society, the Mechanics' Institute has given many unmistakable proofs of its large public spirit and enlightened aims. The Fairs, originated and carried through by the unassisted resources of the Institute, have had a most marked and wide-spread influence on the manufacturing industry of the whole coast, and it would be difficult to name any organization that has done as much for the advancement of the best interests of our people. Seriously engaged in real usefulness, the Institute has not sought to attract the public attention to itself, and it is to this alone that we must attribute its comparatively slender list of members in a city which numbers its skilled mechanics by thousands. In the prosperity of this great center of education every good citizen must feel an interest, and it is the part of all to assist in extending its benefits to the young people of our city. Any one may become a member of the Institute by paying one dollar and fifty cents, entrance fee, with the same amount of quarterly dues in advance—a trifle which opens the doors to knowledge and recreation of the best and most wholesome character. Let any one consider the effect on the moral condition of the community, of a steady attendance at the reading rooms and libraries by the boys and young men now taking their first steps in life. What present would bear such priceless value to an intelligent youth as a membership in the Mechanics' Institute?

The Institute has recently established a Polytechnic Branch, before which free lectures of a useful nature are delivered on the first Thursday of every month. In order to make the usefulness of this department as wide-spread as possible, these lectures are free to all, whether members of the Institute or not. It is in contemplation to have these lectures more frequent as soon as the circumstances of the Institute will admit of the change. The next lecture before the Polytechnic will be given on Thursday evening of next week, at the reading room of the Institute on Post street, by David R. Smith, of this city.

Such associations as the Mechanics' Institute lay broad and deep foundations for enduring civilization.

Zinc-Silver Extraction.

Selby has bought from Judson, for $5,000, the right to use the Balbeck Zinc-Silver Extraction Process from argentiferous lead. This process has been in operation at Newark, N. J., for some time, where it was specially studied by Mr. Judson prior to purchasing it and introducing it in the acid works at the Mission. In principle, it is very nearly the same as the Parke process, the chief feature being a sloping iron hearth heated red hot, on which the zinc oxidizes and retains most of the silver in zinc dross, while the lead runs away. The only difficulty in the use, and the drawback to the general introduction of Parke's process as a substitute for Patinson crystallization, has been in separating advantageously the zinc from silver, and also in obtaining a commercially pure lead. This, Balbeck's process claims to have overcome. Pattinsonizing is done away with in the Harz and in the Rhine lead region, though not yet at Freiberg.

The process considered best at Clausthal, and used with perfectly satisfactory results, is the usual Parke process until it comes to the separation of the zinc. From silver this is effected by smelting in the cupola for rich-lead; the zinc oxide will go into the slag, and the lead will take to the silver, and go to cupellation. The poor-lead, containing still from one to one and a half per cent. of zinc, (enough to render lead unmarketable) is treated with sulphate of lead and carnallite (Mg Cl, but any other chloride, as salt, will do) which forms chloride of lead. This immediately chloridizes all the zinc, leaving the lead beautifully pure.

Railroad Building is to-day, as it has been for two years, one of the leading industries of California. Every landholder, land speculator, miner, and civil engineer, has in some degree of working up, a "railroad on the brain," and judging from the number and character of the railroad items found in our exchanges, a very considerable number of heretofore embryotic railroad schemes are on the verge of being born into the world of fact, requiring only the necessary time and conditions. It is the railroad age, and we are falling more and more into the use of railroads in lieu of common roads.

Pine Tree and Josephine Mines, Mariposa Estate.—The former mine, according to Mr. Goodsell's report, is in a condition to furnish 50 tons of rich ore daily. The latter employs Giant powder, single hand drills, and Chinese labor. On the entire estate there are seven crushers, three turbines, six steam engines, with 160-horse power, and 130 men employed. Mr. Goodsell counts upon $2,000 to $4,000 per day, as the practically possible product. The Ryerson amalgamator is still in use.

Prof. Augustus Steitz, of Helena, Montana, is to report upon the mineral resources and mining of that region, for Mr. Raymond's next annual report to Congress, the Commissioner finding it impossible for him to visit the Territory in person. The *New North West* grumbles, but admits that Montana has been well represented in the Rose Browne and Raymond reports thus far.

The California Laurel Wood.

Among the countless benefits the Fairs of the Mechanics' Institute of San Francisco have conferred on the industries of the Pacific coast, none are so clearly traceable as the present condition of the various branches of manufactures in which the California laurel wood is used. It is but a few years ago when this beautiful wood was extensively as fuel. It was chiefly through the display of its beauty when made into articles for exhibition at these Fairs, that its merits as a material for the cahinet-maker's use were developed; and now it is admitted there is no other wood in the world that equals the California laurel for that purpose. It possesses great strength and durability, can be cut in veneers as thin as writing paper, and is then almost as tough and pliable as cloth. It is readily stained to any color, and is susceptible of a polish equal to the finest mirror, which it retains for years. It may be obtained in sheets of enormous size, as was demonstrated by the immense logs exhibited at the last and present Fair—a fact of much importance, since the introduction of machinery for cutting hard woods into veneers as a substitute for wall paper.

The superb and mammoth room erected in the present Fair, by Strahle & Hughes, the whole of which is formed of California laurel, is the best proof of the growing and anticipated importance of this beautiful wood for ornamental purposes. The gentlemen who have erected this elegant room are shrewd, intelligent men of business, and would not have expended their money and materials unless their enterprise possessed merit. They calculated that hereafter the wealthy citizens of this and other States will have their saloons and dining halls lined with the beautiful California laurel, the peculiar tint of which is better adapted for the reflection of light than any other, while its brilliant a permanent polish causes its surface to be equal to a mirror. There can be no reasonable doubt that an inspection of this elegant, unique and *recherche* wood at the Fair, will give a great impetus to the demand for this wood, proving conclusively that the rise and progress of the business thus created, is a result of the opportunities for exhibition afforded by the Mechanics' Institute Fairs.

PYROGRAPHIC ornamentation on wood, some beautiful specimens of which are exhibited in the Art Gallery hy Blyth & Wetherhee, the lumher dealers, is a process of hurning designs into wood with heated iron plates prepared for the purpose. Rich effects and artistic designs can he multiplied on wood at a trifling cost. It is another case of invention for the masses, in supplying art for the homes of the million.

BASE BALL.—In consequence of the attraction of the "Red Stocking" players, many persons are interested in the history of this game. It would be very hard to tell who originated hase hall, for in the earliest histories we have the game is mentioned. Homer describes it at length in the Odyssey. The Pœacian damsels played the game to music, and Alcinous associated it with music and dancing. It was the chief exercise of the youug Spartans. The Atheniaus once erected a statue to a famous pitcher hy the name of Aristouicus. At Rome it was played by all classes, young and old. Pliny gives us an account of a great player hy the name of Spurima. As played now the game is derived from the ancient English game of "Rouuders," reduced to a system.

EXTENSIVE BOX MANUFACTORY.—One hundred and twenty-five men and boys, including one Chinamau, receive employment at the hox factory of Hohhs, Gilmore & Co., on Market street in this city. Last year 1,200 kegs of nails and over 4,000,000 feet of lumher were worked up into hoxes, the gross sales for boxes, Central American mahogany, working of lumher, etc., reaching the sum of $280,000.

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C. H. WAKELEE & CO.,
601 California street, S. W. Corner Kearny street, buy and sell Farms and City Real Estate. Parties wishing to invest will find it to their interest to call on the . 13v18-3m

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Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms.
14v15qr.

Professional Cards.

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CONSULTING ENGINEER,
Examiner of Mines, etc.,
423 Washington street..... .....San Francisco.
(Having had 33 years' experience in Europe and America,) supplies drawings and designs for Pumping, Hoisting, Crushing, Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

DR. N. T. WHITCOMB,
Dentist,
No. 205 Third street, up stairs, San Francisco
Teeth filled with fine gold, artificial bone, and platina. All Plate Work made and repaired of the best material, at the shortest notice, and warranted.
None cheaper and better on this coast—call and examine specimens
North Beach and South Park cars pass the door.
3v19-3m N. T. WHITCOMB.

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
540 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorf streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
6v19-6m

Blanks, Blank Mining Books
Constitution and By-Laws
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Elegantly printed, with care and dispatch, at the office of the
Mining and Scientific Press.
Orders from the interior faithfully attended to.

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BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers.
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Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
S. E. Corner of Mission and Fremont sts.,
6v14tf SAN FRANCISCO.

SAN FRANCISCO MILL.
HOBBS, GILMORE & CO.,
Manufacturers of Boxes,
Market Street, bet. Beale and Main.
For sale—Mahogany, Spanish Cedar, and other Woods.
24v18 1m

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CARPENTER and BUILDER,
No. 321 Jackson street, between Sansome and Battery,
Stores and Offices fitted up with neatness and dispatch.
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W. C. CAMPBELL,
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No. 20 Fremont street, over Phœnix Iron Works, San Francisco.
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J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

Pacific Chemical Works.
SULPHURIC ETHER,
SPIRITS OF NITRE,
AQUA AMMONIA,
ACETIC ACID,
CYANIDE OF POTASSIUM
—AND—
ACIDS AND CHEMICALS OF ALL KINDS.
FALKENAU & HANKS,
Office and Laboratory, Sixteenth street, between Folsom and Harrison.
LOUIS FALKENAU, State Assayer.
☞Particular attention paid to the Analysis of ORES MINERALS, METALS, etc. 8v17

Chicago Advertisements.
STEELE & YANTIS,
Newspaper Advertising Agents, Dearborn Theater Building, Chicago, Ill.,
Are authorized to receive advertisements for the Mining and Scientific Press at our lowest rates, and also for any Daily, Weekly or Monthly Newspaper or Magazine in America, at publisher's lowest prices. Estimates for any number of papers desired furnished gratis. 11v19

T. W. BAXTER & CO.,
General Mill Furnishers.
Leffel, Bryson, Bodine and Chicago Turbine Water Wheels. Mill Stones and Bolting Cloths. All kinds of Cleaning Machines, including Smutters, Separators, Packers and Bran Dusters. Scales, Belting, Pecks, etc. Mill Irons and all kinds of Castings. P. O. Box, 274.
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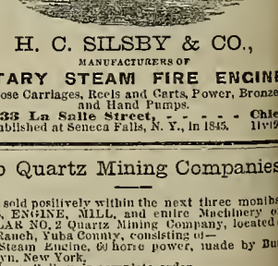
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MANUFACTURERS OF
ROTARY STEAM FIRE ENGINES,
Hose Carriages, Reels and Carts, Power, Bronze and Hand Pumps.
No. 133 La Salle Street, - - - - - Chicago.
Established at Seneca Falls, N. Y., in 1845. 11v19 3m

To Quartz Mining Companies.

To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—
One Steam Engine, 60 horse power, made by Burden, Brooklyn, New York.
Two large Boilers, in complete order.
One Eight-stamp Battery.
One Chile Mill,
One Cornish Lift-Pump, 6 inches, of superior make and finish.
250 feet of 5 inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz-mill.
The Company having ceased operations intend selling of their effects as speedily as possible.
For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco. 24v18-1m

POSTMASTERS are requested to punctually inform us of the removal of subscribers of the PRESS from their locality or of neglect to take the paper out of the office from any cause—when the subscriber omits that duty himself. It is not our intention to send this journal to any party longer than it is desired. If we inadvertently do so, subscribers or others will please inform us.

Spice from the Daily Fair Press.

Behind Time—the back of a clock.

How to prevent sea sickness—stay on the shore.

When is silence likely to get wet? When it reigns.

The ties that connect business men—adver-tise.

Woman lost us one paradise, but makes us another.

A First-rate fellow—An American back-woodsman.

The principal difference between luxury and a necessity is the price.

If you would look *spruce* in your old age, do not *pine* in your youth.

Why is a sickly child like a little bucket? Because it is a little pail—pale.

If you are not the head or tail of a donkey, what are you? No end of a donkey.

The White Pine daily papers consider twice a week often enough to publish.

Why is Berlin the most intemperate of cities? Because it is always on the Spree.

Why is a specimen of handwriting like a dead pig? Because it is done with the pen.

Shame!—We are informed that the profits of first rate perfumers are exactly seent per scent.

Punch thinks the poorest farmer in the land, if unable to feed his calves, can always graze his shins.

Prof. Silliman is the State liquor taster of Connecticut. A good many silly mon taste it on their own account in California.

Jones says the dirty story about Lord Byron and his sister, was not penned by the hand of a lady, but by Harriet Beecher's toe.

The "oldest man in Michigan" walked into a hive of bees the other day and was stung so seriously that now Michigan has no oldest man.

O'Leary gazing with astonishment upon an elephant in a menagarie, asked the keeper: What kind of a baste is that ating hay with his tail?

"What's your occupation?" asked a lawyer of a witness. "Miller." "What sort of a mill do you run?" "A giu mill," was the satisfactory reply.

An exchange gets off the following: "During the scarcity of water in Philadelphia it is proposed that the city hire Prince Arthur to reign over it."

A Joker delared that a blind man, by taking something from the breakfast table, recovered his sight. What did he take? He took a tea-cup and saucer (saw, sir.)

There are menny ways to find out how brave and how honest a man may be, but there aint no way to find out the extent ov his vanity.—*Josh Billings.*

"I Dread the fate of Abel," said a lady to her husband. "Why?" he inquired. "Because I am afraid your club will kill me, by keeping you away from home every night."

Mrs. Jones, a farmer's wife, says, "I believe I've got the tenderest hearted boys in the world. I can't tell one of them to fetch a pail of water but that he'll burst out a crying."

Don't be too anxious to solve a conundrum. We know a man who got two black eyes in endeavoring to find out the difference between a man and a woman fighting in the street.

The editor of one of the city papers is still talking about the "pluck" of the Harvards. That editor and the Harvards together afford a dish of sheep's-head and pluck, for such as like it.

During the recent jollification among the Germans in honor of the centennial anniversy of the great Humboldt, a party of Irishmen in New York attacked a procession, because they were not permitted to join it with banners and mottos to the honor of Hembold, the Buehu man.

A Clergyman who was consoling a young widow on the death of her husband, spoke in a very serious tone, remarking that he was one of the few—such a jewel of a Christian—you cannot find his equal, you well know. To which she sobbingly replied, with an almost broken heart: "I'll bet I will."

A Gentleman was describing to Douglas Jerrold the story of his courtship and marriage, how his wife had been brought up in a convent, and was on the point of taking the veil, when his presence burst upon her enraptured sight, and she accepted him as her husband. Jerrold listened to the end and then quietly remarked: "She simply thought you better than *nun*."

Pottery—Sacramento and Antioch.

What a place pottery occupies in history—or, more properly speaking, in archaeology and in historical geology. Books perish, inscriptions are subject to the crumbling influences of time. But pottery ware buries itself cosily underground, and remains intact for all time. The ancient Romans, and the still more ancient mound-builders of the Mississippi and of this country, have left their most remarkable records in pottery.

How universal are its uses. There are but few potteries in this State; yet it is a wide and splendid field—a promising one always to ingenuity, as to cheapness or excellence of production, or local originality of design; and we have as good material as there is anywhere in the world.

The most complete exhibition of California pottery at the Fair this year is made by Mr. N. Clark, of Sacramento, who undertakes merely the more utilitarian kinds, but made for a great variety of purposes, and in the best quality of product. Not only the pots, pipes, fire brick, etc., but the original substances are exhibited—porcelain clay and steatite, raw and prepared, burnt and ground—rendering this space in the Pavilion instructive as well as suggestive. Clark's fire brick appear to be equal to the best English.

Lobree's Antioch pottery is represented by a class of goods—a beautiful brown stone ware, which is adapted for artistic modeling, and which has a most pleasing effect. All that is needed here is an artist, to shape the clay into designs such as will satisfy the tastes of the wealthy, and the most liberal prices may be commanded. This ware is not expensive. Between articles for use and for ornament, the Antioch pottery should become a very extensive and prosperous establishment. Their display last year was a full and very fine one.

Shades of Squarza.—The successorship of the famous compounder of punches, whose familiar countenance is intrinsically associated with that subject itself, is represented at the Fair, says the *Call* reporter, by "Phister & Kittleberger, who purchased both the secret and the right to manufacture," etc. The *Call* is in error, and does great injustice to the real purchaser, Mr. A. Bona, who is well represented at the Fair, and will promptly produce such evidence of the facts as will convince any one,—not referring to the internal evidence, which he keeps in readiness as a clincher in the character and quality of the punches themselves. Bona is the "only genuine" Squarza punch man—no mistake.

HAYWARD & COLEMAN

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—OF—

Illuminating, Lubricating,

—AND—

PAINT OILS,

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!

An elegant and complete assortment.

SOLE IMPORTERS OF

Devoe's Illuminating Oil

PATENT CANS.

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MEUSSDORFFER,

HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL.

635 and 637 Commercial street.....San Francisco.
125 J street.....Sacramento.
Corner of D and second streets.....Marysville.
72 Front street.....Portland, Oregon.

Our wholesale House, 623 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices. 25v16-3m

Ayer's

Hair Vigor,

For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

HAIR DRESSING,

nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.

Prepared by Dr. J. C. Ayer & Co.,

Practical and Analytical Chemists,

LOWELL, MASS.

PRICE $1.00.

Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18eow4m

REMOVED.

The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. **118, 120** and **122 FRONT STREET**, one door from southeast corner of California street.

July 14, 1869. **BLAM & HOWES.**

4v19-3m

For Miners, Millmen and Metallurgists.

KUSTEL'S NEW WORK,

CONCENTRATION

Of all kinds of Ores, and the

CHLORINATION PROCESS,

For Gold-Bearing Sulphurets, Arsenurets, and Gold and Silver Ores generally.

Price, - - - - - $7.50

A liberal discount to the Trade. For sale by the Booksellers Sent to any part of the United States, postage paid, on receipt of the price. Address,

DEWEY & CO., Publishers,

Office of the Mining and Scientific Press, 414 Clay street

16v1tf SAN FRANCISCO.

Office of California Powder Works,

San Francisco, July 15, 1869.

NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

JOHN P LOUSE, Secretary.

6v19-3m **314 California street**

Mining Secretary.

THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.

Having had a long experience in the purchasing of goods and machinery for miners, parties in the mines will find it to their advantage, where purchasing agents are employed, to send their orders to the undersigned.

J. M. BUFFINGTON,

Room 37 New Merchants' Exchange, California street, San Francisco 17v15-tf

New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

OCCIDENTAL

Insurance Company,

OF SAN FRANCISCO.

Cash Capital, - - - - - - $300,000

GOLD COIN.

Office S. W. corner of Montgomery and California streets.

Fire and Marine Insurance.

All Losses paid in U. S. Gold Coin.

CHR. CHRISTIANSEN, President

B Rothschild, Secretary 20v17-3m

CALIFORNIA TRUST COMPANY.

421 California St., San Francisco.

Capital, - - - - - $1,000,000.

HENRY L. DAVIS, President.
D. W. C. THOMPSON, Cashier.

This Company will transact all kinds of legitimate banking business on the most favorable terms.

Deposits received and accounts kept in Gold and Silver coin, or National currency, payable in kind.

Exchange drawn on New York in Gold or currency available at par in any part of the United States, and exchange furnished on Europe, India, China, etc., at lowest rates.

Collections and Disbursements made at all accessible points, and proceeds remitted without delay.

Interest allowed on Certificates of Deposit, Savings Accounts, Trust Funds, and on average daily balances of desirable check accounts.

Money to loan on U. S. Bonds, State, City and County Bonds, Local Stocks, Staple Merchandise, Real Estate and other good Securities.

The Company will act as correspondent for Banks and Bankers, and as agent in the transaction of all kinds of financial and trust business.

Bonds, Stocks, Papers, Jewelry, Silverware, etc., kept on special deposit in its large fire and burglar-proof vaults and safes, at moderate charges.

Trustees:

Henry H. Haight,	John Currey,
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S. Heydenfeldt,	F. S Wenzinger,
Wm. Blackwood,	Henry C. Lee.

New York Correspondent,
First National Bank of New York.

REVIEW OF THE FAIR.

Classification of Articles.

The number of classes into which the articles on exhibition have been divided the present year, has been greatly reduced from that of last—from thirty to twenty-one. The subdivisions of sections of classes have also been reduced in about the same proportion—from 17 last year to 10 this year. In our reports, we propose to take up these classes in their order, noticing, at length the most novel and important under this heading, and publishing in the catalogue every individual article in each class or section.

Class I.—Machinery for the Application of Power.

The sources of power or force available to the wants of man, after animal exertion are—wind power, water power, steam power or the motive power of heat, and electricity, another mode of the development of the power of heat. The machines or engines by which these powers have been adapted to the wants and uses of man, come naturally first under consideration, and have been purposely so placed in the present classification.

Of all the forces of nature which the ingenuity of man has adapted to his use and convenience, nothing as yet occupies a more prominent place than heat as developed through the agency of steam. The steam engine is ranked first among prime motors.

Much attention has been of late years devoted to improvements having for their object the economizing of fuel in the production of steam by modification in the construction of furnaces and furnace grates, and in the varied character of the fuel employed. There is an important novelty in this direction, shown at the present Exhibition. We allude to the device for burning crude petroleum employed in generating the steam, which we shall fully describe and illustrate within a day or two.

There is sufficient variety in the articles exhibited to enable those interested in the uses of the steam engine to study the subject to advantage. The large 150-horse power engine of Booth & Co. (16 by 30), is considered a fine specimen of a serviceable horizontal cut-off engine, where a large power is required, as in mines. C. O. Farciot's little silver giant, on the Mining and Scientific Press counter, a vertical engine of "one-flea power," was made from the first silver taken out of the Eberhardt mine, White Pine, and represents the opposite extreme from Booth's. For a smaller, economical and universally applicable engine, the double-acting oscillatory machine of H. B. Martin is represented in various sizes. This engine has very interesting and some excellent points, the main one being its simplicity and cheapness; and it is alterable, at only a small expense, into a water engine, where water supplies the pressure in the place of steam—and in that shape, if attached to another moter, it is, without any alteration, a pump, a water engine of this kind reversed, acting as a pump. As a water engine it is especially adapted to great head and little quantity. As an engine, the small cost of manufacture, and as a pump the quantity of water raised, as suction and force pump combined, are the advantages claimed. Squires & Wallace's engines are both fine products of apprentices skill that are worthy of regard. Portable engines for hoisting and for agricultural work, in the most approved forms, are those by Baker & Hamilton, and by Treadwell & Co. There are also represented new and original ideas in regard to regulators and piston packing, the merits of which are freely discussed or explained by very competent engineers. Turbine power can be studied in the Bodine Jonval (in operation) in the Leffel wheels. The other articles under this section have been already separately noticed, or will be referred to hereafter.

Class I.—Power.—Sec. 2—Hydraulics, Hydrostatics and Pneumatics.

The cost of a steam engine, say of about ten-horse power, is now so small—$400 for the oscillatory engine described yesterday—that nothing but the high priced fuel can be urged as a substantial reason for not preferring it to water power. A steam engine is available in every locality and for every purpose; but where fuel is cheap, water power is generally to be had likewise; and the turbine wheels now in use are cheaper still, with no cost for running whatever. The turbines are small, inexpensive iron castings, that can be made to fit under a pipe with the least preparation, and that furnish easily controllable and the cheapest stationary power, where water is to be had. For milling, and even for hoisting, they might in many cases be substituted for steam. Bodine Jonval lets the water through vertically in the direction of the flow, avoiding friction of deflection. It was illustrated and described in the Mining and Scientific Press of January 2, 1869.

The Leffel wheel, modified by Mr. A. Myers, of Portland, Oregon, as exhibited at the Fair, is a double turbine, fed from the periphery and discharging below, the chief peculiarity being the method employed of letting on and regulating the quantity of water. The buckets are spoon-shaped. Myers' modification is highly spoken of as a serviceable wheel.

Pumps fill up the rest of the hydraulic chapter, in the Fair. They are there in goodly numbers; the pumping costs being a very large item in every mine, and in many manufacturing establishments where fluids have to be transported. To obtain any idea of the comparative merits, one must devote half an hour to a tour in company with an expert. Steam pumps, *i. e.*, steam engine and pump combined, are much in vogue, especially for manufacturing establishments. Blake's steam pump, exhibited by Berry & Place, and driving Mr. Fuller's turbine adjoining, was illustrated and described in the Press of May 1st, '69. It is a beautifully working machine, and has got into common use as a boiler feeder of large engines. Two other similar steam pumps are the Walmsley and Smith pumps, which is larger, and the Hayes pump, the peculiarities of which are a convenient method of making all the valves easily accessible by having them placed in a taper plug, and in having two fly wheels. Cameron's fly wheel pumps will work as steam pumps on board ship, or as hand pumps by gangs of sailors. A large assortment is exhibited by Mr. Stoddart.

W. D. Hooker exhibits a new double-cylinder force pump of his own invention, which has the peculiarity and the merit of having only two valves, while all other pumps of the kind must have at least four. Instead of horizontal valves he uses *balls*, the working of which is very pretty to look at. The Gerrish submerged pump has a cylinder which rises and falls in the place of a plunger, with good effect. N. D. Laswell exhibits two force pumps of his own invention, in which he very ingeniously takes advantage of the pulsation in the water column, caused as in the action of the hydraulic ram, thereby gaining, as he claims, ten per cent. in the effectiveness. Martin's double-acting oscillating steam pump is identical with the hydraulic engine described yesterday, only reversed in its action—making what appears to be a most serviceable and convenient pump.

There are also on exhibition W. H. T. Clark's new patent pump, already illustrated and described in this paper, Cushing's well known Excelsior pump, and several others which have their good points, and will be found best adapted to special purposes; all of which were enumerated in our classified catalogue.

Class II.—Machinery and Tools Used in the Manufacturing and Producing Arts.

The department of machinery affords quite a number of articles of general interest and attraction, and the sight-seers are constantly clustered about some one or another of those in operation. The machines on exhibition are not all in operation; but the uses and manner of action of such as are, can be readily understood by visitors generally.

The rapid progress toward perfection and precision in the construction of machinery and machine tools, forms one of the most striking features in the history of mechanism. Although the more generally diffused and more perfect knowledge of the principles of mechanical and constructive science, which has obtained of late years, has led to the production of a great variety of machines for almost every description of work; still new ones are constantly being sent forth to proclaim further and additional triumphs of mind over matter. Accumulated skill and increased experience has enabled the ingenious mechanic to devise machines which will perform the most delicate manipulations with mathematical accuracy, or shape the most ponderous forms which enter into the heaviest works of modern engineering.

But little more than half a century ago, nearly every piece of work had to be shaped to its required form by the tedious process of manual labor; and the world was almost entirely dependent on the dexterity of the hand and correctness of the eye for all mechanical accuracy. The first material step in advance of this almost entire dependence upon the hand and eye, was the introduction into mechanics of the *slide principle*, by Henry Mauldslay, of England. Upon that principle is founded every mechanical substitution of the human hand for holding, applying or directing the motion of a cutting tool to its work. Out of it has grown the *slide-rest*, now an indispensable portion of every lathe. But we have no time to follow such reflections, interesting and suggestive though they are; but must hasten to a brief notice of what we now have on exhibition at the Pavilion.

One of the chief attractions in the machinery department is Ford's Double Hook and Eye Machine, in which the ladies appear to be particularly interested. This machine is the first and only one ever built, which will make a hook and eye in one operation. It is the invention of Mr. J. T. Ford, a machinist in the employ of Messrs. Tubbs & Co., at their rope manufactory on the Potrero. It has been devised and entirely constructed by Mr. F. during his leisure, outside of working hours, and is a monument of ingenuity and patience.

The present perfection of machinery for making hooks and eyes has been gradually reached by one inventor after another. At first the wire was cut up into proper lengths by hand and fed, piece by piece, into one machine after another—the first making the two outside loops of the eye, with a straight piece of wire between, while another machine formed the central loop or eye. So with the hook, which was also made step by step, by a series of machines. After a while a machine was constructed which would take the wire from the reel, cut it at its proper lengths, form all parts of the eye and deliver it, when completed, into a proper receptacle. So with the hook, which, by the way, requires quite a different and more complicated process. The machine now in use for its manufacture has been gradually built up, as the eye machine has been, until it takes the wire direct from the reel and delivers a perfect hook.

Such was the condition of the machinery for this manufacture, when Mr. Ford took hold of it—two machines being required to do the work, each of which occupied a space of about four square feet. Mr. F. has now produced a single machine which occupies less than half the space of either of the old ones; and which at one operation, takes the wire from two separate reels, goes through the whole process, and drops the hook upon one side of the machine and the eye upon the other—equal numbers of each, for any given number of turns. These machines are perfectly automatic in their action, and a boy can tend eight or ten of them.

The old machines, two of which were required to perform the entire operation, could turn out only about sixty per minute. This single machine turns out 100 perfectly formed hooks and eyes each minute in which it is driven at its proper speed.

Some idea may be formed of the complex nature of the machine from the fact that it requires upwards of twenty motions to form a hook and eye. This is really one of the most useful and ingenious novelties presented at the Fair, and affords another illustration of the genius and originality of our California inventors. The entire machine is very compact and exceedingly simple for so complex a work. Its weight does not exceed 150 pounds.

Mr. George T. Pracy, sole agent for L. W. Pond's celebrated tools, exhibits two lathes, a patent punch, shears, an upright drill and four lathe chucks, all of Mr. Pond's make, and all tools of acknowledged excellence.

In the line of saws, Mr. George A. Day exhibits a jig belt-saw, with swivel table. These saws are made of three sizes. Mr. T. Stebbins also exhibits a jig saw, which is a California invention of much merit.

Otis Jackson, agent, exhibits one of Nichols & Adam's endless or band scroll saws, which is in operation every evening, and which forms quite an attractive feature in the exhibition. There is at present but one other saw of this description in California, the other being in use at the California mills. This saw is arranged to run over two pulleys, like an ordinary belt, passing through a table between the pulleys, on which the material to be sawed is placed; and as its motion is always one way, (downwards) tho stuff, by the very operation of sawing, is held firmly in its place. The advantages of this saw are found in its continuous action, and in the saving of power in doing its work by a continuous, instead of a reciprocating motion.

Messrs. Pilkington & Lane exhibit a machine which they call the Excelsior wood saw, and which consists of a common buck saw so mounted as to be driven by a crank motion. The machine is quite ingenious, and attracts a large crowd when in operation; but we apprehend all intelligent mechanics will agree with us that, so far as driving it by man-power is concerned, two men could do more work in a day with two buck saws, operated by hand, than they could by expending the same amount of strength in driving that machine. The loss will be equal to the entire sum of the friction of the machine. If power is to be applied at all to such work, it can be more economically done by the use of a circular saw.

Berry & Place exhibit quite a number of machine tools, more of which, we believe, are connected so as to be put in motion. We notice, among other things, an ingenious machine for turning such things as spools, wooden ware for toys, faucets, awl hafts, etc., a planing and matching machine, drilling machine and engine lathe. These tools are from their warehouse, 112 and 114 California street, where they have for sale the most extensive variety of machine tools on the Pacific Coast.

Messrs. J. Kindleberger and William A. Arnold exhibit three new California inventions—an Automatic Blind-shade Tenoning Machine, a Double-acting Blind Wiring Machine, and a Reversible Door Butt. These inventions,—which were made by Messrs. Kindleberger and Arnold, are the property of the Inventors' Association of San Francisco,—and are each important and valuable. The two first named are for use in the manufacture of window blinds, and are very important for the special work for which they are designed—saving in each instance, at least 50 per cent. of the labor required, over any other machine in use for the same work, and doing it equally well.

First we have the tenoning machine. In other machines employed for this work, the dressed slips intended for the slats are placed in the top of the machine, edgeways, turned by hand, and taken out by hand after they have been finished by the machine. In this invention, now exhibited, the strips are fed endwise into the end of the machine, which cuts the slats at the proper length, prepares the tenon on each end of the same, and delivers it automatically into a proper receptacle, all at one operation.

In operating the machine at present in use for "wiring," the first slat has to be placed in the machine and wired, and then another wire taken up and interlocked, by hand, with the wire already inserted, when the second slat is put in position for receiving its wire or staple, by the machine. From this description it will be observed that each slat has to be handled twice. By this machine both wires are inserted at one movement of the lever, and one man can easily do 50 per cent. more work than can be done with any other machine in use. In work where so much manual labor is required as in the manufacture of window blinds, the advantages of these machines are almost beyond calculation. Their general introduction into blind manufactories throughout the country, and throughout the world, in fact, will be a matter of necessity, as there is no other machine which can possibly compete with them.

Last, but not least, we have the Reversible Door Butt, which, by a simple change of the fillet—the work of an instant—can be used for either a right or left hand door. This butt, or hinge, is simple, strong and durable, and costs no more than those of ordinary make. The trader will find it for his advantage to keep these butts on hand, inasmuch as with them he can keep up an equally full stock at one half the investment now required for such goods. Of the butts at present in use he must keep as many left as right hand ones. When the same thing answers for both right and left, he can reduce his stock one half and do the same amount of business. We understand the inventors have been offered several thousand dollars for this patent, but no sum yet named has reached the value which they place upon it.

T. D. Young exhibits an engine lathe and a massive iron shaping and planing

machine, neither of which are in operation; but the principles and operations of both are well understood by mechanics. William Sellers also exhibits a shaping machine, and n two-inch bolt screwing machine. Baker & Hamilton exhibit n medium three-side molding machine. F. A. Huntington exhibits a shingle machine, not in operation.

Mr. A. S. Hallido exhibits in the machinery department n new invention of his own, which he denominates n grip pulley, from its peculiar mode of netion. Pulleys of this description are designed for nso where power is to he conveyed by ropes—particularly wire ropes. Where circumstances require n lnrge amount of power to be conveyed by the nso of small pulleys, the ropo over an ordinary pulley *will* slip. To guard against this, clip pulleys have been introduced, the most not able of which has been employed by Mr. Fowler, the inventor of the famous English steam plow, for the purpose of conveying the power from his engines across the large fields over which he drives his plows.

Mr. Hallidie has found the necessity for even n more efficient pulley than Mr. Fowler's in the multifarious uses to which his wire rope is applied. To meet that want he has dovised the one now on exhibition, which he calls a grip pulley, from its more tenacious grasp upon the rope. The improvement consists in an ingenious device by which the clips which surround the outer circumforeneo of the pulley are made to grip or hold on to the opposite "bites" of the rope while it is passing over the pulley. The instant the pressure of the rope comes upon these clips they close upon and grip it so as to prevent slipping, but let go automatically, the instant that pressure is removed. The principle is similar to that which causes the grip in the toes of birds. The instant the bird alights upon his perch, the pressure causes an involuntary contraction, by which it is kept in position and retains its place even after consciousness is lost in sleep; but when death ensues, the organism of the muscles ceaso to act, and the bird drops from its perch. This pulley will he found a very important aid in the use of wire or other rope for conveying power. Its action is very distinctly shown by pulling on one side of the rope thrown over it, as shown in the Pavilion; if it were thrown over an ordinary grooved pulley, it would he found to slip very readily; hut when thrown over this one, the friction or grip is sufficient to convey a very large amount of power—many times that which could he conveyed by a smooth groove, in fact, nearly the entire strength of the rope can he held in this grip.

Mr. Spaulding exhibits his pioneer carpet beating machine. Being in motion, its principles and operation may he distinetly seen and understood by all visitors.

There are two gas machines on exhibition—the Boston Union, exhibited by D. Simpson, which was fully described and illustrated in the FAIR PRESS of Septemher 22d; and Sloper's apparatus, exhibited by C. W. Stevens. In the latter apparatus, hydrogen gas is first generated by the immersion of iron filings in a dilute solution of sulphuric acid, the hydrogen being conveyed from the chamber where it is generated, into a chamber below, filled with gasoline, where it takes up its due proportion of earbon and is convorted into a fixed earbureted hydrogen gas of high illuminating power. The apparatus is ingenious, and works automatically—making gas only when it is being nsed. Efforts are being made to introduco this gas into general use in this city.

CHICAGO MACHINERY.—One large foundry and machine-shop in Chicago (Messrs. Preble & Co.) has determined to enter the market in competition with San Francisco, for the mill work of White Pine. Messrs. Prehle & Co. guarantee their prices for every charneter of machinery twenty-five per cent. eheaper than the like articles from San Francisco.—*Call.*

IMMIGRATION SOUTHWARD.—The San Jose *Mercury* of September 15th, says:

During the past week an average of ten wagons per day havo passed through this city, containing household goods and families, going into the southern portion of the State to settle. They are generally well supplied with live stock and children, both desirable acquisitions for the southern counties.

CONTINENTAL Life Insurance Co., 302 Montomery street, corner of Pino.

THE cigar makers of Chicago have been olding a convention. Their work all nded in smoke.

Valuable Books on Mining, Mineralogy, Geology, Metallurgy, Etc.

The following is a revised list of books interesting to our more special readers. The newest and most complete treatises on subjects within the scope of this paper, including local maps, pamphlets of value, etc., will be added from time to time:

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BANCROFT'S Guide for the Pacific States 50

BARSTOW—Sulphurets; What they are, How Concentrated, How Assayed, and How Worked; With a Chapter on the Blow-pipe Assay of Minerals: 1 vol. 12mo. cloth 1 00

BLAKE, W. P.—Annotated Catalogue of California Minerals. 8vo 50

BLAKE, (W. P.)—Report on the Precious Metals at the Paris Ex., 1869. (To be had through Members of Congress.)

BRACE, C. L.—The New West. 1 00

BROWNE, ROSS—Mineral Resources of the Pacific States. San Francisco, 1868..... 4 00

BOURNE (John)—Handbook of the Steam Engine. Illustrated. 2 vol. 12mo. cloth 2 25

CADWALADER'S Map and Description of White Pine. San Francisco, 1869..... 1 50

COTTA, B.—Lithology. London, 1867. ..... 3 00

CONGDON.—Mining Laws and Forms of California and Nevada, and the Mining Ordinances of Mexico. 184 pp. 8vo; flexible cloth; 1864..... 2 50

CROOKS & ROHRIG'S Translation of Kerl's Metallurgy (not yet received here in full)....

CRONISE (W. H. V.)—Natural Wealth of California..... 6 00

DANA'S Manual of Geology. Numerous Illustrations. 8vo. half morocco. Philadelphia, 1867. 6 75

DANA'S Text-Book of Geology. Illustrated. 12mo. cloth. Philadelphia. (School Edition) 1864... 2 25

DANA'S System of Mineralogy. New Edition. 8vo. cloth..... 10 00

DANA'S Manual of Mineralogy. Revised edition, 1863..... 10 00

ELDERHORST'S Blowpipe.—Analysis and Determinative Mineralogy. Third edition, revised. 8vo. cloth. Philadelphia, 1866..... 2 50

EVANS—White Pine. 25

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New Mining Advertisements.

Bucklin Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of September, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 49 Merchants' Exchange, California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixth day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the twenty-sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. D'ELL STONE, Secretary.

Office, No. 49 Merchants' Exchange, California street, San Francisco. oct2

North America Consolidated Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of September, 1869, an assessment of two and one-half cents (2½c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN ARMSTRONG, JR., Secretary.

Office, 302 Montgomery street, San Francisco. oct2

U. S. Grant Mining Company.—Location of Works: Carlisle, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of September, 1869, an assessment of fifty cents (50c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-sixth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the thirteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, No. 226 Clay street, San Francisco. oc2

Mining Notices—Continued.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of September, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep25

Evening Star, No. 1, Silver Mining Company. Location of Works: White Pine District, White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of August, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twenty-third day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the twenty-second day of October, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room No. 6, No. 302 Montgomery street, San Francisco, Cal. au28

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Saturday, the second day of October, 1869, and the sale thereof until Friday, the twenty-second day of October, 1869. By order of the Board of Trustees.

se25 WM. H. WATSON, Secretary.

Glenwood Mill and Mining Company, Green-wood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of August, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 413 California street, (office Security Life Ins. Co.), San Francisco.

Any stock upon which said assessment shall remain unpaid on the eighth day of September, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty eighth day of September, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, No. 413 California street, San Francisco. je12

POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Wednesday, the sixth day of October, 1869, and the sale thereof until Tuesday, the twenty sixth day of October, 1869. By order of the Board of Trustees.

sep11 O. D. SQUIRE, Secretary.

Rippon Gold and Silver Mining Company.— Location of Works: Silver Mountain District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of September, 1869, an assessment of twenty-five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, N. E. corner of Fifth and Howard streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twentieth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. F. BERNARD, Secretary pro tem.

Office, northeast corner Fifth and Howard streets, San Francisco, California. se25

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of September, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 408 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. se11

Siempre Viva Silver Mining Company, Dis-trict of Zaragoza, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of September, 1869, an assessment of one dollar and fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 314 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary

Office, 314 California street, Up stairs, San Francisco, California se11

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fifth day of August, A. D. 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 520 Montgomery street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of October 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twentieth day of October, 1869, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURPEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. au28

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	3	268	bal 78 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	10	1293	bal 127 76
J H H Williams	69	979	bal 92 21
J H H Williams	70	20	bal 1 89
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10	bal 1 00
W H Kelm	43	5	1 50
Otis V Sawyer	45	20	6 01
Otis V Sawyer	46	20	6 00
Thomas Houseworth	58	500	bal 58 00
Thomas Houseworth	60	18	5 40
R G B McDonough	48	100	bal 10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	49	670	bal 63 00
J B Littlefield	61	630	bal 63 00
J B Littlefield	62	9	bal 90
George H Russell	66	20	bal 4 44
George H Russell	67	10	bal 2 22
George H Russell	68	10	bal 2 22
George H Russell	64	600	bal 133 12
S M Smith	74	200	bal 20 00
Samuel B Meyer	75	50	15 00
George B Merrill, Trustee	63	631	189 31
Otis V Sawyer	71	1290	bal 112 24
Otis V Sawyer	72	38	bal 3 58

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. se25

Notice.—The adjourned Annual Meeting of the Stockholders of the WASHTELLO MINING COMPANY will be held on MONDAY, October 18th, 1869, at the office of J. F. Hubbard, Esq., Room No. 3, Hayward's Building, California street, at 8 o'clock P. M.

DANIEL McLEOD, Secretary.

San Francisco, Sept. 24, 1869. se25 2w

WHERE TO ADVERTISE.—The attention of traders and mill machinists is called to the fact that the *Mountain Messenger*, of Downieville, Sierra County, possesses many special advantages as an advertising medium over a majority of the interior press, it being the only public journal published within a radius of sixty miles, in the richest and most populous mining sections of the State. Its weekly edition is double the average of country papers, being without the range of large dailies, and having no competition at home. Its local columns afford many items for our city cotemporaries, while its rates of advertising are reasonably low. jly17tf

ENGLAND had a Hogg who was a great poet. Indiana has the honor of a poet who steals hogs.

Machinists and Foundries.

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

ap17-3m 113 Beale street, near Mission, S. F.

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

14v11 SACRAMENTO CITY

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

16v16q No. 23 Fremont street, San Francisco.

SAN FRANCISCO

Pioneer Screen Works.

JOHN W. QUICK,

203 Fremont street, near Howard, San Francisco.

Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufactura of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GLASGOW

Iron and Metal Importing Company

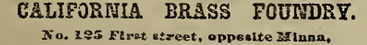
Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McGRINDLE, Manage.

PACIFIC FILE WORKS,

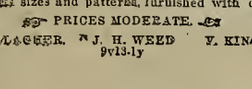


No. 53 Beale Street, bet. Market and Mission,

SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

2v17-3m T. G. DURNING & CO



JAMES MACKEN,

COPPERSMITH,

228 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.

13v11

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

All kinds of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

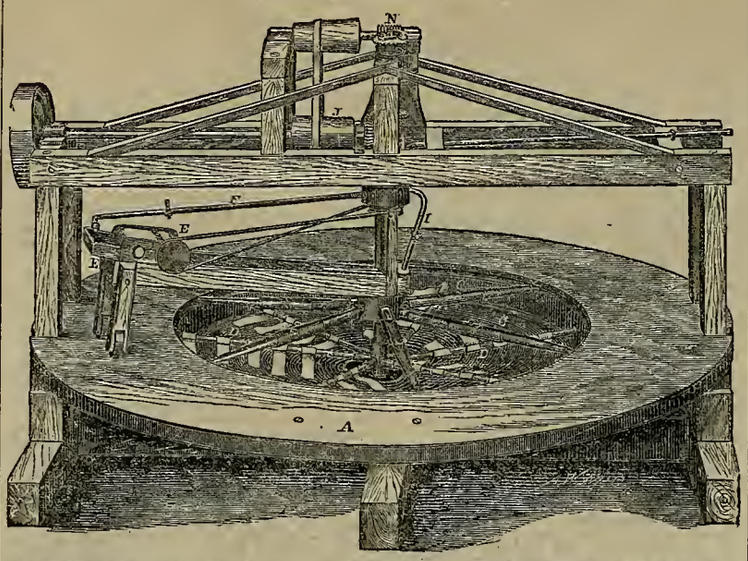
J. P. GALLAGHER. J. H. WEED V. KINGWELL.

9v13-1y

PAINE & STEPHENS'

IMPROVED CONCENTRATOR,

For Saving Gold and Silver Sulphurets.



ne Machine, costing about $1,300, is sufficient to work the Sands from 25 to 30 Stamps,

Less power being required than for any other Machine. The attention of quartz millmen throughout the State is directed to the subjoined certificates, and if they desire they can visit the Amador Mining Co's mill, near Sutter Creek, the Eureka Co's mill at Grass Valley, or the Banner Co's mill near Nevada, and see for themselves.

CERTIFCATES:

GRASS VALLEY, Jan. 4th, 1869.—This is to certify, that we have used the Paine, Stephens & Harry Concentrators for over twelve months. They have given us entire satisfaction, and are the best we ever used. WILLIAM WATT, Supt. Eureka Mine.

This is to certify, that we have had in use for the past 18 months one of Paine, Stephens & Co's Sulphuret Saving Machines, constructed by John T. Harry, (called a buddle,) and which operates satisfactorily, particularly so in saving fine sulphurets, and we recommend it as well worthy of use, even where other Concentrators are used above it, as it will pay if there are any sulphurets.

WM. L. TISDALE, Supt. Star Spangled Banner Mine.

NEVADA CITY, Oct. 26, 1868.

Any one wishing to purchase one of these useful machines, can do so by applying to THOS. N. PAINE, at Grass Valley, Nevada County, or JOHN T. HARRY, Sutter Creek, Amador County.

13v16eow

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,

Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand. Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States

1v17tf

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel,

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

13 and 15 Fremont street, near Market, San Francisco.

10v14qr

CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

143 Beale St., bet. Mission and Howard,

SAN FRANCISCO.

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17-qy J. WEICHHART, Proprietor.

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,

SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

WHEELER & RANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST.

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco,

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

10v18qr

CALIFORNIA FILE MF'G CO.

No. 437 Brannan Street,

Between Third and Fourth, San Francisco.

W. WUSTHOFF, L. KRAMER, M. HARRIS, J. BURKE.

NEW FILES OF EVERY DESCRIPTION

ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19-qy

ELECTROTYPE ENGRAVINGS, CUTS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,

SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hanebrow's Patent Chatteuge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, height of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufactura and introduction of their inventions. 1v16tf

HO TEAMSTERS!

CONTINUE TO

USE HUCKS & LAMBERT'S

CELEBRATED

H & L Axle Grease,

To which you have given so decided a preference for the last

FOURTEEN YEARS,

It is the only reliable article

IN THE MARKET

Every care will continue to be used to sustain the high reputation the H & L Axle Grease, has so long and justly attained.

☞Be sure and ask for the H & L brand, and see that the

TRADE MARK H & L

IS ON THE COVER OF THE PACKAGE

NONE OTHER IS GENUINE.

FOR SALE IN EVERY STATE IN THE UNION.

HIBBERD, SANBORN & CO.,

South Point Mills, Berry Street,

Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.

6v19-3m

Delays are Dangerous.—Inventors on the Pacific Coast should bear in mind that by patronizing our Patent Agency they can sign all necessary papers for securing patents almost immediately, thereby avoiding months of delay requisite in transacting business through Eastern agencies.

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is eminent evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and settlers for themselves, at the office, **229** Fremont street.

1v1 San Francisco.

The Excelsior Force Pump.

For all Purposes the Best.

ALL PUMPS WARRANTED.

BRITTAN, HOLBROOK & CO.,

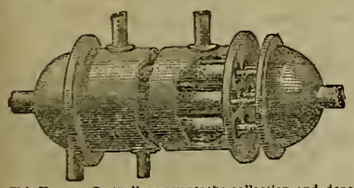
AGENTS,

111 and 113 California St.,

SAN FRANCISCO.

9v19-2m

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

16v13-3m WM. B. CROSS, Patentee, Sacramento, Cal.

REBELLIOUS ORES.
THE HAGAN FURNACE.

The above method for the purification of Rebellious Ores is respectfully offered to the public. Repeated actual workings show that the

HAGAN FURNACE

Will accomplish all that the Reverberatory Process will do, and at an expense that is merely nominal. It has never failed to treat any ore effectually.

It has never been claimed for it that it will extract gold from ores which do not contain any of that metal.

Parties owning rich but refractory veins, can treat with the undersigned upon the basis of

GUARANTEED RESULTS,

With responsible security. For an interview, and all desired particulars, address

THE PACIFIC ORE CO.,
P. O. Box **1019**, San Francisco.

June 25 1869. 29v18-3m

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

—AND ALSO IN—

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v12-3m

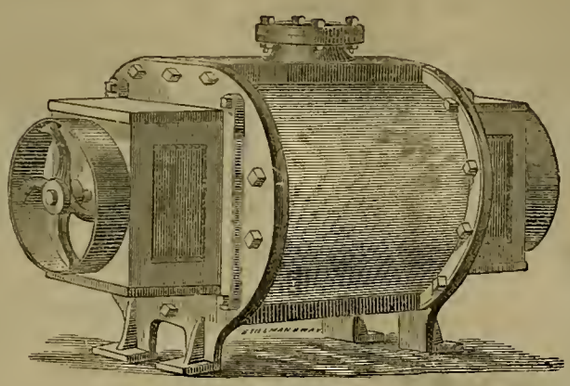
Changing the Address.—No charge is made for changing the address of this paper. To give all necessary information, write us plainly as follows: "Change address of the *Mining and Scientific Press* from Mr. .. at .... P. O., ... County, ... State, to Mr. .... at .... P. O. .. County,.... State..... 186—."

ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

MANUFACTURED BY KEEP & BARGION,

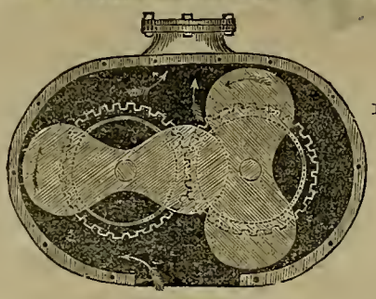
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition, 1867.



Patented Nov. 1st, 1864; July 25, 1865, and Oct. 6, 1868.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER Than any Blower Now in use.

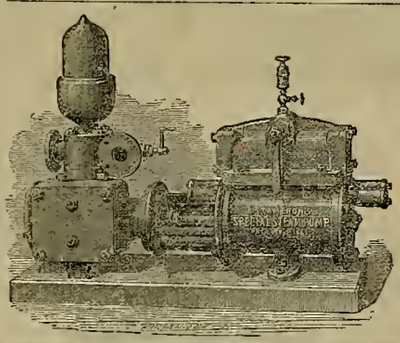
One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,
4v16 3m **Globe Iron Works, Stockton, Cal.**



CAMERON'S
STEAM PUMPS.
PICKERING'S
Engine Regulators.
GIFFARD'S
INJECTORS.
MARINE
ENGINES.
SURFACE
CONDENSERS.

DAVID STODDART,
114 BEALE STREET.

GOLD METAL, OR COLLINS' METAL WATCHES.

IMPROVED OROIDES.

Great Reduction! Prices in Greenbacks!!

We have made great improvements in our Watches lately, and will hereafter send only our BEST QUALITY, WITH BILL OF COLLECTION IN GREENBACKS.

BEAUTIFUL WATCHES for Ladies.... .... ..$15 and 20
" " for Gentlemen..... 15 and 16
LEONTAIN CHAINS for Ladies' Watches.....$6
LONG NECK CHAINS for Ladies' Watches.....$6
GENTS' VEST CHAINS..... $3 to $6

The firm of C. E. COLLINS & CO., so long and favorably known in San Francisco, will be closed after September 15, 1869, and will continue in our

NEW COLLINS WATCH FACTORY,
No. 335 BROADWAY,
CORNER OF WORTH STREET, NEW YORK CITY.

☞ When SIX Watches of the above are ordered at one time, we will send one Watch FREE, making seven Watches for the price of six.

We deal largely in WATCHMAKERS' TOOLS AND MATERIALS, as usual.

Avoid persons who propose to sell the GOLD METAL or COLLINS' METAL WATCHES, as the GENUINE can only be got of us, and no one is authorized to use our name in any way.

Address, **C. E. COLLINS & CO.,**
13v19-3m **No. 335 Broadway, Corner of Worth Street, New York City.**

Notice to Miners, Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,
3v13-1y Stove Store, No. 1 Clay street, below Davis.

STOCK CERTIFICATES, STOCK TRANSFER JOURNALS, STOCK LEDGERS, ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed to order on short notice, at moderate prices, at the office of the *Mining and Scientific Press*.

THE RISDON
Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

Corner of Beale and Howard Streets,
SAN FRANCISCO.

Steam Engine Builders, Boiler Makers, Machinists, Foundrymen, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.

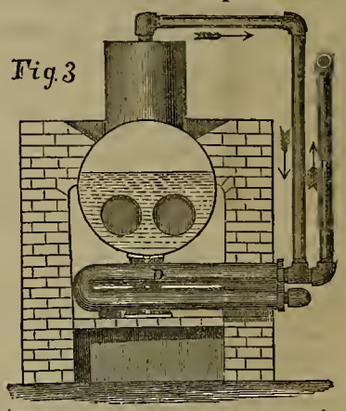
Directors:

S. F. Butterworth, Lloyd Tevis, James Pollock,
Wm. Norris, Joseph Moore, Chas. E. McLane,
John N. Risdon.

JOHN N. RISDON.....President.
JOSEPH MOORE.....Vice President and Superintendent.
LEWIS R. MEAD.....Secretary.
2iv17-qy

Important to every one using Steam for any purpose.

CARVALHO'S
Patent Steam Superheater



[SECTIONAL END VIEW OF BOILER, WITH SUPERHEATER.]

Saves Fuel! Saves Water! Saves Pressure!

Brief Extracts from letters from parties using Carvalho's Superheater. Full letters can be seen on application:

NAVY YARD, Washington, June 15, 1860.

"Superheater saves 12 per cent. in fuel and 10 per cent. more in speed of engine."

NAVY YARD, Washington, Oct. 8, 1867 (after seven years of service.)

"Superheater yet attached to boilers, and appears to be in good order."

HOWARD WATCH AND CLOCK CO., Boston, May 19, 1866.

"Superheater saves us at least 10 per cent. in fuel and gives a large increase of power."

JONES & SMITH, New York, March 21, 1867.

"Superheater saves 20 per cent. of coal, less steam pressure, exhaust more serviceable in drying paper."

STEAM ENGINE WORKS, South Brooklyn, April 23, 1867.

"Superheater saves not less than 20 per cent. fuel; no priming!"

CRICKETT LEATHER CLOTH CO., Newark, N. J., Oct 16, '67.

"Superheater economizes 25 per cent fuel; does our work with 25 lbs. less pressure steam, and steam superior for drying purposes."

N. Y. DYEING & PRINTING ESTAB., Oct 4, 1867.

"Superheater brings contents of our dye vats to boiling point in one-third less time and one-third less increase of water; saves us at least 15 per cent. fuel."

CONTINENTAL OIL REFINING CO., Binghampton, N. Y., Sept. 20, 1867.

"Superheaters give entire satisfaction, and we superheat to 550 deg—an increase of 200 deg."

CAROM MANUF. CO., So. Hadley Falls, Mass., Oct. 17, '67.

"Superheater saves 15 or 20 per cent. fuel; steam for paper mill now perfectly pure and dry—an important advantage in our business."

STATEN ISLAND FANCY DYEING ESTAB., June 18, 1867.

"Superheater saves at least 25 per cent. in fuel, and we have the advantage (hardly to be over-estimated) of perfectly dry steam."

ÆTNA IRON WORKS, San Francisco, Sept. 15, 1867.

"Superheater saves 25 to 30 per cent. in fuel; no priming."

CONTRA COSTA LAUNDRY, Oakland, July, 1868

"Superheater causes a use of 50 lbs. steam instead of 60 lbs.; use much less water, and there is a saving in fuel."

HAVILAH M. CO., Cal., August, 1868.

"Superheater causes a use of 40 lbs. steam instead of 60 lbs; use much less water, and there is a saving of fuel." (2 sets.)

SIXTH MECHANICS' INST. FAIR, S. F. Sept. 4, 1868.

"Superheater used proves that it saves fully 30 per cent. in fuel." (Chief Engineer.)

NEVADA MILL, Virginia City, May 30, 1869.

"Superheater is a perfect success, and saves three cords of wood in ten, or 33⅓ per cent. in fuel; engine works better."

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Awarded Silver Medal, Maryland Institute, Baltimore.

Awarded Silver Medal, American Institute, New York, 1865.

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JOHN L. CONSTABLE, Engineer. 25v18tf

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MINING AND SCIENTIFIC PRESS.—The Mining and Scientific Press, published at San Francisco by Dewey & Co., is one of the most valuable of our exchanges.

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Its scope and purpose are expressed in the title, and we recommend miners and mechanics in particular to subscribe for it. Terms $5 per annum, in advance.—*Trinity Journal, March 13th.*

MINING AND SCIENTIFIC PRESS.—This useful and scientific journal has entered upon its eighteenth volume To the scientific, mechanic, and practical men of al classes it is almost invaluable; and we are glad to learn that it is increasing in patronage every day.

The publishers, Dewey & Co., San Francisco, say the present volume shall be superior in all respects to its predecessors.

The terms are $5 in advance, $3 for six months.—*San Bernardino Guardian, March 6th.*

THE PRESS is one of the most valuable and instructive papers published in the United States, and every miner, millman, machinist and foundryman should he a subscriber. The information to he derived from its columns is worth many fold times the subscription.—*Grass Valley National.*

MINING AND SCIENTIFIC PRESS.—This excellent scientific journal has entered upon its eighteenth volume.—*Chico Courant, Jan. 15th.*

THE *Mining and Scientific Press* should have an extensive circulation in every mining community on the Coast.—*Placer Herald, Dec. 19.*

W. FRANK STEWART is Dewey & Co's accredited agent for the Patent business in this city, and will attend to their affairs in that specialty.—*San Jose Mercury.*

MINING AND SCIENTIFIC PRESS.—This journal is devoted to mining and scientific researches, and has been conducted with great ability. It has been greatly enlarged and improved.—*San Jose Patriot.*

THE MINING AND SCIENTIFIC PRESS has become almost indispensable to the miner and machinist, and is well deserving of the patronage which we are pleased to learn it receives.—*Mariposa Mail, Jan. 10th.*

THE PRESS is a credit to the State, and is fast gaining in popularity. It commends itself to all classes, and we hope many in this section will become subscribers.—*Pajaronian.*

THESE gentlemen not only print a first-class scientific and mining journal, but are also trustworthy Patent Agents, and doing much towards the inventive business of this coast.—*San Jose Mercury.*

THE MINING AND SCIENTIFIC PRESS commenced a new volume with the new year. It is a credit to the State, and to the mechanic or miner, is a great source of valuable information. It has every appearance of prosperity, and we hope it may continue growing in wealth and influence.—*Pajaronian.*

WE CONSIDER THE MINING AND SCIENTIFIC PRESS the most valuable mining and mechanical newspaper issued in the United States. Dewey & Co., publishers, are also solicitors of foreign and American patents and conduct patent cases of every kind. We guarantee that all business confided to them will be carefully attended to, and we furtber believe that every miner, mechanic, and scientific man should bave their valuable paper.—*Auburn Stars and Stripes.*

NEW VOLUME.—The MINING AND SCIENTIFIC PRESS has entered upon another year's work looking improved and promising. This paper is devoted to the interests of the scientific world, and to the miner and mechanic is almost invaluable.—*Gilroy Advocate.*

TO MINERS.—William H. Murray, traveling agent for the Mining and Sciutific Press, published by Dewey & Co., of San Francisco, is in town soliciting subscriptions for that paper. To the intelligent miner, a paper like the *Press* is particularly valuable, keeping him posted on the latest discoveries in reduction of ores, new machinery, etc.—*Grass Valley National.*

MINING AND SCIENTIFIC PRESS.—We look upon this paper as one of our most valuable exchanges, in fact it deservedly stands at the head of all publications embracing mining, scientific and mechanical subjects, and contains much miscellaneous matter of interest, and is a gem of neatness. The PRESS is published by Dewey & Co., San Francisco, and at its present low price of five dollars per annum, should be patronized by every one, but more especially by miners, mechanics and inventors who wish to pursue their avocations with intelligence and economy.—*Tidal Wave, Idaho.*

THE MINING AND SCIENTIFIC PRESS has entered upon its XVIIth Volume. It has donned a new-style hat; or, in newspaper parlance, a new heading, which gives it the solid, scientific look it merits. Other improvements typographical are also noticeable. No call for improvement in its matter.—*Amador Ledger, July 16th.*

THE MINING AND SCIENTIFIC PRESS, which commenced its seventeenth volume on the 4th, comes to us with a newly engraved head, and presenting otherwise its usual tasteful appearance. We take this occasion to say that the PRESS is one of the best papers of the kind in the United States, and every miner and mechanic in the State, as well as the business man, who would keep posted on our industrial resources, should have its name on its subscription books.—*Nevada Gazette.*

MINING AND SCIENTIFIC PRESS.—This excellent periodical has been for many years the faithful chronicler o important events and a medium of valuable information to the miners of the Pacific coast.

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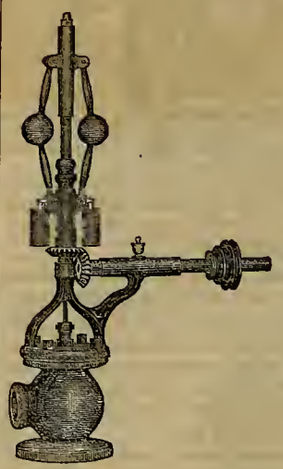

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I also take pleasure in informing the public that during my recent visit to the East I became SOLE AGENT for

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ACKNOWLEDGED TO BE

THE BEST NOW MADE.

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ALL KINDS OF STEAM ENGINES AND MILL WORK GENERALLY.

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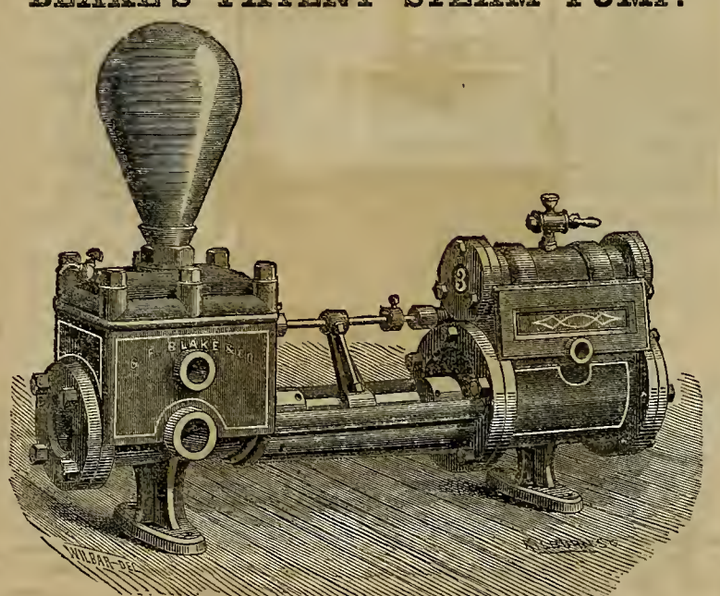
BLAKE'S PATENT STEAM PUMP.



The Steam Pump, which is an independent Pump for steam engine and pump combined) is comparatively a new invention. It has, however, gained much favor with mechanics, and now seems to be coming into general use. The Pump, of which the accompanying engraving is a representation, is the invention of Mr. George F. Blake, of Boston A poor description only can be given of it without a diagram of its interior mechanism. The water cylinder is shown in the left hand side of the cut, underneath the air chamber. This cylinder may be made either of brass or cast iron; but brass valve seats, and both hard rubber and brass valves are used. The water is taken in at the lower aperture, and there are openings on both sides, for convenience of suction and discharge pipes. It is a double-action pump, having double water valves, which are very simple. The water is drawn in and forced out from both sides of the piston head, which, with the strong and ample copper air-chamber directly over the valves, keeps up a constant and large flow when the pump is in operation. The steam cylinder in ordinary sizes is about double the size of the water cylinder. The small cylinder, directly over the steam cylinder, contains the steam valve, which is operated entirely by steam, having an auxiliary valve, which is opened by the arm shown on the piston rod, with each stroke, just sufficient to allow the steam to work the main valve quickly. This main valve is cylindrical, and by a patent device of Mr. Blake's is perfectly balanced, thereby overcoming all friction or pressure of steam, and allowing it to slide with the greatest facility, as the steam is admitted at either end of the valve cylinder. The construction of the valve and auxiliary valve is such that IT IS IMPOSSIBLE for the piston TO STOP "ON THE CENTER," which was a general fault with steam pumps prior to adopting the plan of driving the valve itself by steam.

This Pump took the first prize at the Maryland Institute in 1868; the gold medal of the Middlesex Mechanic Association of Massachusetts, the same year, and the gold medal of the Massachusetts Charitable Mechanics' Association; the New Hampshire Mechanics' Association, and the Iowa State Fair, in 1867

It is positive under any pressure; may be run AS SLOW OR FAST AS MAY BE DESIRED; will discharge more water than others of same dimensions. The steam part being cast in one entire piece obviates the trouble of leaky joints. The steam valve is perfectly balanced, and it WILL START AT ANY POINT of the stroke, and discharge all the water of condensation. These Pumps are now very generally employed at the East as BOILER FEEDERS; in

SUGAR HOUSES, BREWERIES, TANNERIES, STEAMBOATS, Etc.,

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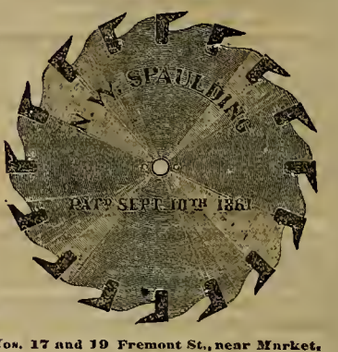

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THE MORGAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; chance of temperature has no effect on them; stand on the average forty to fifty pourings.

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United States Branch Mint, San Francisco, Cal., March 12, 1869.—Messrs. A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,

Melter and Refiner, U. S. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869.—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs A. S. Hallidie & Co.:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market. We have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869.—Messrs A. S. Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,

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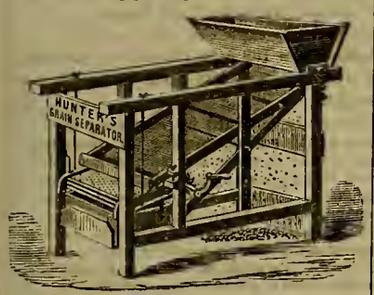
A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, OCTOBER 9, 1869. VOLUME XIX. Number 15.

Hunter's Grain Separator.

We herewith give a small view of Hunter's Separator, which machine has been modified in its construction since illustrated in the last volume of the FAIR PRESS. This separator has been exhibited by its inventor at all the late Fairs of the Mechanics' Institute, and is now on exhibition, where visitors who are not already familiar with its workings can witness its operations. A view of the engraving and the following paragraph will give a tolerably good idea of its working principles.



By the use of cams and levers, a vertical jar motion is given to the chess screens, and a horizontal vibratory movement to the barley plates. The meshes of the chess screens are prevented from clogging by the constant taps which the chute receives from the cams and levers on the under side. The screens and plates are adjustable by set screws, so that the inclination and vibration can be nicely regulated.

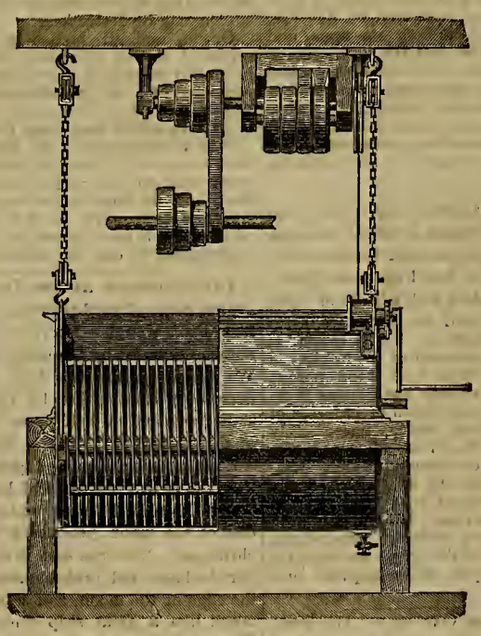
Hunter & Weister are the patentees, No. 218 Davis street, San Francisco.

"THE ARMSTRONG HEATER," so labelled, and placed near the main entrance to the machinery department, is exhibited by its manufacturers, Booth & Co., of the Union Foundry. This apparatus is designed as a heater and filterer for the feed-water of steam boilers. The one shown is not complete in its construction; as the openings for receiving the exhaust steam from the cylinder, for the discharge from the heater of the steam which is not condensed, for taking the heated and filtered water from the heater to the boiler, and for receiving the new water into the heater, are none of them shown. The interior of the cylinder is filled up by a succession of pans, such as are seen upon the floor near by, and the principle of its action is to receive the water into the upper pan, and allow it to trickle slowly down through the center and over the lips of the series of pans to the bottom; passing the while through the exhaust steam, taking up its heat and condensing a portion, and finally passing through a straw filter in the step projection at the bottom, from the outside of which it is taken to the boiler. These heaters are a late Eastern invention, where they are attracting considerable attention. We shall probably be able to give an illustrated description at an early day. Its principle may be seen and fully understood on application at the Union Foundry.

N. W. SPAULDING, of the Pacific Saw Company, was recently presented by the workmen in his establishment with a splendid cane, containing California quartz sage.

Rickard and Paul's Slum Amalgamator.

We take pleasure in illustrating, this week, Mr. Rickard's machine for the saving of larger percentages of gold and silver in argillaceous, calcareous and other light ores of these metals. Taking into consideration that the United States of America is now producing $75,000,000 annually, while Australia furnishes nearly $30,000,000 more, it follows that if the present rate of loss can only be reduced by ten per cent., the yearly saving of precious metals in these countries alone would amount to $10,500,000 by the introduction of this improved system of working. The average amount of loss sustained by the different gold and silver mining companies, by *all* the present systems of amalgamation, clearly shows, by assays of ore and tailings, that from all sources it is not less than fifty per cent. of the assay value of gold ore, and from thirty to forty per cent. in silver, and in some cases much greater.



RICKARD & PAUL'S SLUM AMALGAMATOR.

This machine having been expressly devised with a view to recovering the float gold and silver which has hitherto been lost in the slums—as well as the heavy metal obtained by ordinary methods of working—it is necessary to operate on the ore in charges or batches of half a ton, more or less, according to the size of the machine, or density of the ore, and to continue the action of the machine from half an hour upwards—that is, until the amalgamation is complete, which can be readily ascertained by assays of the tailings.

It is a very simple contrivance, as will be understood by reference to the engraving. A trough in which there revolves a series of amalgamated disks, arranged in screw form, so as to keep the pulp in constant motion to and fro. From numerous experiments, it is believed that the loss in amalgamation has been reduced from fifty to less than twenty per cent. in the case of gold ores, while its action has been equally effective with silver slums from the Comstock lode.

The following results from an experiment made on the 21st of January, 1869, illustrate the action of the machine. The ore operated on was from the Chontales mines, in Nicaragua, and, before amalgamation, assayed 5 ozs. 14 dwts. 8 grs. of gold per ton—$120. After half an hour's treatment in the machine a sample of the tailings was taken, which on being assayed gave but 16 dwts. 8 grs. ($17) of gold per ton; the action was continued, and other samples of the tailings taken at one, two, three and four hours, assays of which showed precisely the same proportion of gold as that taken at half an hour; proving that all the gold in a condition to be obtained had been separated from its earthy matrix in half an hour, the fourteen per cent. remaining in the pyritous tailings being recoverable by other systems of treatment. Where these ores are worked in batches or charges in pans, or other forms of amalgamating machines, the time consumed varies from three to eighteen hours. If the contents be heated by steam, or setting the machine over a fire like a boiler, the amalgamation will be accomplished in a much shorter time; but the inventors say they have had excellent results with cold water—say, 86 per cent. assay value of gold in half an hour's working.

As soon as the plates are completely covered with mercury they are to be fitted on to the screw flanges, and slipped on the axle, so as to form a continuous screw by means of a clamp attached to each plate, and three cross-bars of wrought iron running the entire length at right angles with the blades. These cross-bars assist materially in the agitation of the contents. Fifty to one hundred pounds of sodiumized mercury is introduced into the trough, and the screw lifted in, and fitted at about one-eighth or three-sixteenths of an inch from the bottom, so that the edge of each screw plate shall dip about one-fourth of an inch in the mercury. The charge of ore and water, not too thick, is now put in (the ore previously ground to a fineness that will pass through a sieve of sixty holes to the linear inch, and the finer the better), and the screw put in motion at the rate of ten to fifty revolutions per minute, and reversed every two or three minutes, or oftener, if it is found the ore travels too fast from end to end. This back and forward action of the screw dashes the particles of ore with violence, first on one side and then on the other of each amalgamated screw plate, which soon becomes coated with gold or silver amalgam, the excess of which flows off and mixes with the fluid mercury at the bottom of the trough or tank. The addition of one or two per cent. of salt in gold, and a larger proportion in silver ores, with or without sulphate of copper, is, in addition to the application of heat, as before stated, attended generally with beneficial results, by intensifying the electro-chemical action of the machine. The mercury is to be fortified from time to time (four, eight or twelve hours) by the introduction of a little solid sodium amalgam, composed of three parts sodium to ninety-seven parts mercury, the proportion of one part of this amalgam to 1,000 parts of mercury in the trough.

Tinned or galvanized (zinc) iron plates may in some cases be substituted for or used with copper, as, when properly cleaned, they will readily combine with the sodiumized mercury—they have the advantage of cheapness over copper, and intensify the electo-chemical action when used in combination with that metal.

When the machine is to be used for the purpose of washing or concentrating tailings, the speed of the screw is to be diminished sufficiently to permit the sulphides or other heavy minerals to subside to the bottom, while a stream of water carries off the light earthy matter through the top or middle plug hole, the machine being fed from time to time, until a sufficient quantity of concentrated matter has accumulated, when it is to be drawn off at the lowest hole.

To sum up, the special advantages claimed are, that, through the combined action of heat, galvanism, and great amalgamating surface presented to the auriferous or argentiferous particles contained in the slum or ore, by the rapid (lateral and reversible) motion communicated to the charge by the screw arrangement of the plates, these machines accomplish more perfect and rapid amalgamation than any other system hitherto known. They may be used with great advantage after the pan or other grinding amalgamator. One machine will operate on from twelve to twenty tons per day.

Further information as to capacity, prices, etc., may be had on application to Messrs H. J. Booth & Co., Union Foundry, San Francisco.

Mechanical Progress.

Steam-Jacketing Cylinders of Cornish Pumping Engines.

An article in the *Journal of the Franklin Institute*, by H. P. Birkinbine, C. E., questions the value of the steam jacket in effecting any economy of fuel, and expresses the opinion that it rather lessens the efficienoy of an engine. The loss by outward radiation from the cylinder is indeed prevented; but that from the outside of the jacket will he greater, becanse of its greater surface and becanse it is kept at a high temperature. A higher degree of expansion is possible with a steam jacketed cylinder, because heat is imparted by the steam in the jacket; but this heat must ho furnished from tbe boiler. In regard to refrigeration by the condenser, the writer says:

"In single-acting engines, snch as the Cornish, tbe loss is much less than in double-aoting engines, as the steam end of the oylinder is never directly connected with tbe condenser, the steam (nsually at ahout 202° Fah.) passing through the eqnilibrium passage into the other end of the cylinder hefore the exhanst is opened. When tho exhaust is open, the inside snrface of the cylinder is exposed to the cool ing effect of the condenser, and the steam in the jaoket is robbed of heat during the entire indoor stroke, or while the steam is doiug its work on the opposite side of tbe piston. This is not only waste power, but throws additional labor on the condensing npparatus. The accumulation of water in the oylinder oan be removed probably as effectnally and economioally hy admitting the steam into the oylinder at a temperature sufficiently above thnt necessry to perform the work, to absorb all the water. There may hnve been difficulty in doing this where steam was used at the low pressnre of from four to ten pounds, bnt it can readily he accomplished when the practice is to mnintain a pressure of from 30 to 45 ponnds."

A Nut-Cracker.—A recent English patent is for a machine for cracking palm nuts as a preliminary to the extraction of the oil. "A revolving fnn is used for producing a blast of air which throws the nnts with sufficient force against nn iron or metal target to crack them without injnring the kernels. The fan is inclosed in a sheet of iron, or other suitable case, having nn entrance passage, provided with a hopper for the introduction of the nnts, and a discharge pipe through whioh they nre driven by a current of air, and discharged against the target."

The Variable Cut Off.—The following is from a desoription of Wrigbt'e cut-off, in New York *Engineering:* "It has independent exhanst valves in the bottom of the cylinder, which are brought as close as practioable to the end of tbe cylinder, to obviate waste of steam in filling the passages. These are worked by a rod taking hold of the valve from the under side, the rod heing in the exhaust steam, thereby obviating the necessity of etuffing boxes in the live steam, and they are worked with the minimnm amonnt of friotion. The maximum preeeure on these valves is at the ends of the stroke, and they are relieved of the pressnre in proportion to the expaneion of the eteam in the cylinder during the stroke."

The Teleiconograph.—This is a new instrnment for making drawinge of distant objects, invented by M. Revoil, a French architect. The *Builder* says: "The principle ie that of allowing the image tranemitted hy the object-glass of a telescope to pass through a prism connected with the eye-piece. The rays of light are refracted by this prism, and thrown down upon a tshle placed below the eye-piece. The distance hetween the prism and the tahle determines the eize of the image projected on the latter, and it ie easy for the oheerver to trace on a paper placed on this sketching-table, the actual ontlinee indicated hy tbe refracted light.

The telescope is placed on a etand with screwe and clamps, allowing of botb borizontal and vertical motion, as it may often be necessary to give traverse to the instrnment to make a conneoted drawing of larger area than can be included in the object-glass at one view. The ndvantage poseessed by the Teleiconograph over the camera lucida is manifest. The size of the image may be determined at will. We have befors us a lithograph of the summit of one of ths towers of Notre Dams de Paris, taken by means of the instrument of M. Revoil, at the distance of 300 meters. It is 12 in. long. A sketch taken by the aid of a camera lucida is drawn along side, and is only one inch in length."

A Platinum Coating for Glass or Porcelain.

Prof. Böttger, of Frankfort, has pnblished a method for the prodnction of an uniform and lustrous plntinum film on glass, porcelain, earthenware, and the like. For the film to be deposited on glass or porcelain to be free from breaks, and have the lnster of silver, it is essentially necessary to prepare a chloride of platinum as free as possible from acid, and completely dry. The chloride, placed in a small porcelain mortar, is covered with oil of rosemary, and the two are kneadsd together, the oil being renewed till the brownish-red chloride is converted into a pitch-blnck paste-like mass, no longer containing visible particles of nnchanged chlorido. When the change appears complete the oil of rosemary is poured away, and the black product is further kneaded with five times its weigbt of oil of lavender, until they combine to a thin, completely homogenous fluid. The contents of tbo mortar need only he allowed to stand for half an hour, to be ready for use. On the object to be platinized, nn even thin cost of this preparation is laid with a soft hrusb; the thinner tbe film ths more lustrous it eventually bocomes. This done, the vessels are exposed in a mnffle, or with requisite caution over a Bunsen flame, to a feeble red-heat for a few minutes, which hrings out the lnster of the platinized surfacs. Should faults occur in a film, or portions of it be accidentally removed dnring the heating, hy a simple galvanic process this film of plntinum in its entirety can he removed from the vessel without the employment of aqua regia. It is merely necessary to cover the surface with bydrochloric acid, and touch it with a little rod of zinc; instantly, hy development of hydrogen on both its upper and under surface, the metallic film, which here plays tbe part of cathode, separates in an attenuated lnminated form, and in spite of great specific gravity, not unfrequently rises to the surface of the acid. Tbe platinum merely requires separation from tbe acid by filtration to recover it for further use.

Walls Made Water-proof.—The Ransome process of making artificial stone bss been npplied by the inventor to the rendering of the walls of buildings water-proof. They are first wsshed with silicate of soda, which is applied until the bricks are sstnrated. The strength of the solntion is regulated by the character of the brioks,—a heavier mixture being used upon porous walls. After the silicate has become thoroughly absorbed, n solntion of chloride of calcium is applied, which, immediately combining with the silicate, forms a perfectly insoluble compound, which completely fills up all the interstices in the brick or stone, without in any way altering its original nppearance. By this operation the wall is rendered perfectly water-tight, and, as the pores of the bricks are filled for a oonsiderable depth, no subsequent process is necessary.

Metallio Steam Gauges.—"The working part of these gaugee consists of a very flat box, in the form of a eection of a cylinder at right angles to its length. The top and bottom are made of brass and corrugated in a seriee of concentric circles, so as to make them very flexible and capable of being bulged outward by internal pressure. All that is necessary to ndapt this simple contrivance to the measnrement of steam pressure is to connect the interior epace by meane of a tube with the steam boiler, and to attacb to tbe top and bottom an nrrangement so as to enlarge small and scarcely perceptible motions into large ones. The last reqnirement is usnally fulfilled hy means of a donble lever attachment, ratchet wheel, pointer, and a dial."—*Manufacturer and Builder.*

Giant Powder at Hell Gate.—Prof. Maillefert is at work with dynamite on the rocks of Hell Gate. He has agreed, that by December 1st, there shall he 25 feet of water at menn low tide over Way's Reef, Pot Rock, and Shelldrake Reef. The first of these is 200 feet long by 100 feet wide. When he hegan upon it, August 2d, it had but 12½ feet of water over it. It now has over 18 feet.

Scientific Progress.

Chemical Reaction of Light.

Professor Morren has beon experimenting in the same direction with Professor Tyndall, upon the chemical reaction of light, making use of the solar light and inorganio substances, instead of,—as was the case with Prof. T.,—the electric light and organio bodies. We have not space to devote to a detail of Prof. M.'s experiments,—bnt we give, from *The Engineer*, the following conclusions which they induce him to admit:

"If a body is formed and maintained under certain oscillntory conditions, the pecnliar oscillntions of the atoms which oonstitute its molecules must differ from those in the medium in which the body has been prodnced. But if this body is transferred into another medium in which it meets with oscillations isochronons to those of its own atoms, these oscillations increase, and the *vis viva* which the atoms acquire may become so great as to drive the atoms heyond the radius of their sphero of action. The atomical edifice is demolished, and as the conetitntive atoms preserve nevertheless tbeir pecnliar affinities, they form a new edifice adapted to the oscillatory couditions in which they are now sitnated. Thns tbey escaps the shocks of the creating medium by ceasing to vibrate synchronicslly with that medium, exactly as an elastic sonorous body does not vibrate and gives no sound when the ærial vibrations which strike it nre not synchronous to those which it is capable of reproducing. But if the new edifice is again submitted to the action of other synchronous rays it is again demolished.

Most curions evolntions, wbich seem to ask of the chemist—(1) Under what peculiar circumstances and influences bodiee are formed? (2) Under what vibrations precisely their atoms oscillats? (3) Finally, under what other vibrations the molecular edifice may be destroyed?

Ozone, and all hodies capable themselves of nniting with otber bodies, would be simply molecules whose atoms would be possessed of a *vis viva* enfficient to animate and set in motion the ntoms of the other hody with which tbsy nnite themselves.

Will a *simple body* even always remain sucb for us, if it become possible to discover what oscillations bave assembled the atoms of its constitutive molecule, and what csn destroy it? Such is the question which the future lovers of natnre and science may be one day enabled to solve."

The Eclipse of August 7th.—The following picce of word-painting is an extract from Prof. Hough's description of the pbenomena as noted by the mnttoon observers. We find it in the *Gas-Light Journal* for September 16th, which, hy tbe way, gives some three and a half pages of nbstracts of papers resd at the Salem meeting of the American Association, and promises more: "As the light grew less and less, suddenly the sun seemed to pass under the hlack disk of the moon, producing a feeling of chilliness. Now was seen in all its eplendor the large red protuberance sitting on tbe edge of the moon, and appearing very much like a great ship under full sail. Farther to the left was another, nearly as large, with two hent rays, somewhat reeembling the antlers of a deer. Five others, not quite as large, were seen on different parte of the disk, all of a deep red oolor.

After looking with astonishment for a few eeconds, we proceeded to meaenre with the micrometer the height and positon of the largest flame. But jnet at the critical moment, fortnnately or unfortnnately, one of the hand rods for moving the telescope came off, and it was necessary to remove the eye from the tube to fix it. On looking up, one of the grandest spectacles met the eye of which it is possible to conceive. Surrounding the dark body of the moon was a orown of light with rays shooting out in five great eheaths, to a distance eqnal to tbe snn's diameter, or nearly a million of miles. For a time everything else was forgotten, and we gazed for eight or ten eeconds with astonishment, akin to awe, at this magnificent spectacle. No painting can represent it, and no pen can describe it. It ie one of tbose sights which must be seen to he appreciated. But we soon realized that precions moments were slipping away. The telescope was again brought in position, and the height of the large protuherance measured, and fonnd to be 0 2′ 45″, or more than 70,000 miles, 150,000 at the hsse.

While still gazing, a ray of light suddenly flashed out, and the total eclipse of August 7th was over."

Trout Monstrosities.—*The American Naturalist* has an article by Dr. Coolidge describing and figuring certain curious malformations wbich occasionally come under the notice of the trout breeders: "Sometimes, instead of there being one fish only attached to an umbilical vesicle, there are two; not two separate ones, hut two heads attached to one body, or two bodies attached to one tail. This curious partial duplication of the fish, takes place in the egg long hefore it is hatched, and is due, probably, to a bifnrcation, of ths furrow around which the backbone of the fisb is formed. The cells of the thickened oval spot, instead of forming one straight furrow, for some reason or other form ono in the shape of a Y. Two backhones form around ths two branches, with two heads, while one tail has to do for hoth. As far as has been observed, it is always the anterior part whioh is duplicated. No one body with two tails has been found. The tail remains single while the head and hody nre douhled; and this dnplication vsries from a partial division of the head only to two nearly complete fish, with different brnins, aud hearts, and stomachs, and whose hearts do not even beat together, though the circnlntion in the tail must be common to both."

Coohinilin.—This, the coloring matter of the cochineal insect, called also carminic acid, consists, according to De la Rue, of carhon, hydrogen, and oxygen, in the proportions expressed by the formnla $C_{28}H_{14}O_{16}$, or 168 parts of carbon, 14 parts of hydrogen, nnd 128 parts of oxygen by weight.

It may be obtained by digesting the insects in ether to remove the fat, dissolving the residue in water and adding acetnte of lead, when a lead carmine lake will be precipitated. This is washed, dissolved, and decomposed hy hydrosulphuric acid, which precipitatee the lead as a sulphide, leaving the carminio acid in solution, which is eeparated by evnporation. Carminic acid is a purple-brown friable mass, soluble in all proportions in alcohol and water, nnd nnchangeable by the nction of strong sulphuric or hydrochloric acid. It forms pnrple lakes with salts of copper zinc and silver; nnd with tin, a brigbt crimson. Very fine lakes are also prepared by its combination with fine gelatinous alumina.

Fevre on Hydrogenium.—M. Fevre states that nccording to his experiments, the hydrogen in palladinm saturated therewith is present as a chemical componnd, and not simply in tho state of condensed gas. He states also that the vapor of boiling mercury is as little n conductor of electricity as hydrogen, and that therefore the fact of the non-condnction by hydrogen of electricity cannot be regarded as an objection to its heing considered a metal.

Agassiz on Humboldt.—The oration of Prof. Agassiz in the Boston Music Hall, on Sept. 14th, the occasion of the Hnmboldt centennial celebration, fills seven and a half closely printed columns in the *Springfield Republican*. Humboldt was n personal friend of Agassiz. When Prnssian ambassador in Paris, he being sixty-two years of age, and Agassiz a young graduate of medicine of twenty-four, he gave bim permission to come to hie room as often as he pleased; and occasionally did him the honor—as Agassiz relates with pride—to seek him ent in his own lodging. No man living is better fitted than Agassiz, to deliver an oration on such an occasion. We may give extracts in fnture issnes.

New Compound of Lime and Sugar.—Messrs. Boivin and Loisean have formed n new combination of lime and sugar, which is prepared in the following manner: To 200 kilos. of syrnp contnining 60 per cent. of crystallizable sugar, 120 kilos. of caustic lime as a thickish milk of lime are added, and next carhonic acid gas is passed through tbe mixture. After some time a precipitato is formed, and as soon as it makes it appearance, 20 litres of tepid lime-water are added, and the stream of carhonio acid gas is stopped. The precipitate is the new compound, and it contains in 100 parts, 43 of sugar, 40 of lime, and 17 of carbonio acid.

REVIEW OF THE FAIR.

Classification of Articles.

CLASS II.

MISCELLANEOUS MACHINERY—Continued.

The most important article in this class is an original Californian—or rather Oregonian—invention, by Mr. J. W. Sutton, and is called the Rotation Dynamometer. We have already described it in these columns, and will here only add that we can think of no good reason why Mr. Sutton's invention should not be a perfect measurer of the exact amount of power used in any given machine to which its test may be applied. Its basis is the revolving force exerted upon an arrangement of spiral springs—but will be best understood from personal examination, under the explanation of Mr. Sutton, who is always on the ground. To the machinist, Sutton's dynamometer is an interesting machine. We are told that no rough work to which steam gearing may be applied, is so rough as to incapacitate the dynamometer from showing always the exact amount of power used. It might, for example, be used to measure the power used by the revolving cutters of the Standish steam plow. Questions of great importance as to comparisons of power in machine building can be determined with it by ocular demonstration.

But one windmill is in the catalogue this year, and that a very good one—the Atwood & Bodwell machine. Two working mills are in the yard—one attached to a Smith pump; and a fine model inside is running by the wind from Root's blower. The fan heads properly to the wind of its own accord, and by merely pulling a cord the wind itself will throw it out of gear and bring it to a standstill.

Johnson's hoist with "safety clutch," is again on exhibition. It is one of the most approved hoists for city purposes, as it is perfectly under control, and can be worked by hand by those standing on the cage.

Brick-making by machinery is represented by the two best made models in the fair. The model of the Douglas machine, exhibited by Mr. Williams, and run by Squires' little engine, is exquisite workmanship. This machine works dry, while the Rightington & Rider machine first mixes with water in the usual way. Two or three times the number can be made that a gang of men could turn out without the machine.

Quartz screens of various patterns are exhibited by M. Quick and by Booth & Co., Mr. Quick makes "slot cut," and "slot punched," shaker and other screens, the uses of which are well understood by mill men.

A hair and pulu picker, manufactured by William Lyne, of 115 Davis street, is the shoddy machine, which wearers of shoddy should examine while in operation, if they be not prejudiced against much dust.

Castagnino's "machine for inlaid work" would be worthy of examination if it could be found.

CLASS III.

MINING, QUARRYING AND METALLURGY.

The Mechanics' Fair does not contain everything that would be instructive in this department, nor even everything that is new or important—but a few of the most essential inventions, and enough to make an examination interesting, as well as instructive. The mills and pans draw the specialists together, and the working points are discussed, and objections are made and answered.

Mr. G. A. Taylor's steam stamp mill is one of the most prominent articles on exhibition; its substantial build, great size, and tremendous crushing power, attract the eye and gratify the imagination of every visitor to the Fair who has faith in the gold and silver-bearing capabilities of rock. Here is the giant contrivance (he thinks) that will compel a speedy and unconditional surrender,—for what mountains can withstand the blows so tirelessly repeated, of two such terrible fists.

The good points and advantages of the Taylor mill will receive fuller justice hereafter, as we understand that a mill of the kind is in operation in the mines not far from Stockton. Meantime, it is proper to state that objections are urged, such as that the cylinders are in the dust and jar of the stamps; that as large a steam cylinder on a separate engine would do as much work in the ordinary way, by raising ten stamps to one of these, or twenty for the work of the two; and that the engine would then be run smoothly and clearly in another room. Taylor's mill strikes 200 blows a minute, and gives each time a 2,000-pound blow. Thus in the compactest shape possible it does the work, we are told, of an ordinary 20-stamp mill. The inventor proposes to furnish this mill, and set it up, for the cost of *erecting alone* an ordinary 20-stamp battery, thereby enabling millmen to save the entire cost of their battery.

As it is found that stamps and dies wear away rapidly enough in stamping to make the loss of iron quite an item, Mr. J. W. Coffey exhibits a battery shoe and die which is both internally and externally chilled by a peculiar process, which effects a decided saving in the duration of the stamping irons. The Risdon Iron Works also exhibit shoes and dies which are claimed to have peculiar advantages, but the merits of which can only be determined by test of practice. There are two amalgamating pans—the Varney and Hepburn grinders—both great improvements upon the first pans invented. The Varney pan grinds with a cutting edge, which adapts it to a soft argillaceous gangue; while the Hepburn grinder operates by the friction of loose revolving disks, or cylindrical blocks on end—an arrangement adapted to a harder substance, and to fine pulverization. Pieces are thrown in of hickory nut size, and reduced more economically, it is claimed, during the process of amalgamation, than by any other means, not excepting the stamp mill. While the latter claim is not substantiated, and scarcely reasonable, it must be admitted that the Hepburn pan operates prettily as a grinder. A number of these pans have been tried at Virginia City, discontinued, and set to work again. An objection urged against them is that since the iron cannot be hardened evenly, the disks will grind down irregularly, and finally be thrown out of the circuit; but the owners of the pan deny that they are experiencing any such difficulty.

Varney's pan is a complete iron mill, having even its burr-furrows, partly filled with wood, and partly worn open by the action of the ore upon the exposed edges of the wooden slats.

A quartz mill with revolving stamps rotated by gearing, is exhibited by D. M. Hosmer. If the object of this is to save friction, it is rather a loss than a gain, for the friction of the gearing will be greater than that of the lifting cam.

Smelting is represented by Hanscom & Co's foundry cupola, which has been in actual use quite a number of times, to the edification of thousands of interested spectators. It is of boiler iron, lined with fire brick, and is furnished with blast by the Root blower. Lead smelting products, for the market, are exhibited by T. H. Selby.

Another quartz crushing and grinding machine consisting of two parts, is exhibited by Col. J. A. Collins, of Virginia City—a modification of the Chilian mill, and a hollow barrel containing balls, to pulverize fine. Both parts are complicated, and are somewhat adversely commented upon. Col. Collins has exercised much ingenuity, however, in devising these machines, and indeed, has built them over quite a number of times.

CLASS IV.

AGRICULTURAL MACHINERY, IMPLEMENTS AND TOOLS.

The labor of the farmers has been vastly ameliorated, of late years, by the rapid strides which have been made in the application of machinery to agriculture. Almost every variety of farm work is now mainly performed by machinery, and the wear and tear upon human sinew and muscle has been mostly transfered to inert matter. The cradle, the flail, the fan and the scythe have almost entirely disappeared, while the hoe and the old-fashioned single plow occupy but an unimportant position on the farm to what they once did. The entire work of farming has been revolutionized within the experience of the present generation.

With all this change, improvement in culture has also come. By the aid of improved plows the farmer is enabled to plow deeper and more thoroughly; while the cultivator does its work far more thoroughly than the hoe formerly did. The machine reaper, mower and thresher do their work far better, more thoroughly, and at infinitely less expense than the same work was done in the old-fashioned way.

In passing through the agricultural department at the Pavilion, the eye rests upon almost every class of machinery. We see there, first implements for the thorough pulverization of the soil; for sowing and dropping the seeds; for covering them evenly, when deposited on the earth. Then, when the tender plant makes its appearance and requires careful cultivation, we see the proper implements for doing that work; and so on, until it attains its full growth and maturity, and all with very little assistance from the hand-hoe, which is now generally considered quite antiquated in character.

When the cereals are ready for the harvest, we have innumerable appliances for cutting, handling, threshing, etc., and if we go out in our fields, we shall find a Californian invention, not shown in in the Pavilion, which at one operation cuts, threshes, separates, winnows, and sacks the wheat. There is scarcely an item of farm-labor that is not now done by mechanical contrivances, even to ditching, cutting down trees, and pulling up stakes and stumps. The practical mechanic and farmer now go hand in hand—the former sending forth from his shops mechanical helps that move and work at his will, and perform, with great celerity and excellence, the labor that formerly had to be done by the muscle and sinew of the farmer.

The agricultural implements have been placed in a class by themselves this year, and mostly in a large room upon the north side of the pavilion, constructed expressly for their display. Among the California inventions and make are a gang plow, by G. A. Davison & Co.; a side-hill plow, by I. & H.H. Sooville; Brown's challenge plow; Gustafson's tree and shrub-box, and Knott's horse power fastener. All these inventions were patented through the MINING AND SCIENTIFIC PRESS PATENT AGENCY, and they are all worthy of special examination.

Among the gang plows on exhibition, and not enumerated above, are the Sweepstakes, exhibited by Baker & Hamilton, and which has taken several first premiums in this State, and the Tustin Champion plow, an Oregon invention. This is its first public exhibition. Messrs. Treadwell & Co. exhibit Hnie's patent gang plow. There is also the Watson (Portland, Oregon) gang plow and the Murphy plow, exhibited by Morris, Murphy & Co. Messrs. Hawley & Co., exhibit the Moline plows, intended particularly for working among corn at an early stage of its growth. There are quite a number of the common walking plows, a number of which, together with the Moline plow, above mentioned, were received by Hawley & Co, of this city, overland, since the opening of the present exhibition.

Of seed sowers we have also a variety. Mr. L. L. Sawyer exhibits Finlayson's broadcast seed sower, an Oregon invention. Much merit appears to be justly claimed for this sower, and the agent proposes to give a public exhibition of its merits outside of the Pavilion, in a few days, at which competition will be freely invited. Baker & Hamilton also exhibit Floyd's broadcast seed sower—a large one to be operated from a wagon, and another smaller one to be carried upon the shoulders. They also exhibit the Buckeye seed drill, for sowing and covering grain in drills.

Baker & Hamilton make a very extensive and noticeable exhibit. In addition to the articles noticed yesterday, this firm exhibits the Union mower, a machine which has been in use on this coast for the last five years. It is a light and cheap, yet strong and durable machine. It cuts a swarth four feet six inches wide. They also exhibit a 50-saw universal cotton gin, with condenser; also an improved hoisting engine, which they import of various sizes, from five to twenty-horse power. These articles may be seen in the machinery department, near the iron foundry exhibit of Hanscom & Co. They also exhibit in the agricultural room a superior cast steel single plow—a deep tiller, with cutting wheel, two other single plows, a Gall's feed cutter, and a sweepstakes horse fork, manufactured by the San Leandro Sweepstakes Plow Co. This last is a new invention, for which a patent has been applied for.

Treadwell & Co. make a fine exhibit from their large stock of agricultural implements. We notice first one of Hoadley's superior portable engines, greatly improved, and especially adapted for use on this coast. Accompanying this engine, is one of Russell's improved threshers and separators. These two machines, as now exhibited, with their latest improvements and modifications, form one of the best combinations for threshing and separating grain ever presented to the farmer.

Messrs. T. & Co. also exhibit one of Haines' headers, with Doane's patent adjustable reel. An important improvement has been added to this reel, consisting of a simple device for raising and lowering it, so as to enable it to reach grain with different or varying lengths of stalks; and also to be more readily used in windy weather.

This firm also exhibits Kirby's reaper and mower, with combined self-rake and reel. This machine has met with great success, and is suited to all conditions of grain, heavy, light or lodged. The machine can be set to cut any desired height from the ground.

With the aid of the machinery herewith presented, the broad and level fields of California may be harvested so cheaply as to enable the grain growers of this State to compete with those of any other State in the Union, in our Atlantic seaports or any other portion of the world. This firm also exhibits a cotton gin, suggestive of the possibility of a new agricultural industry on this coast. They also exhibit two broadcast seed sowers, one of large size, to be operated from a wagon, and another smaller one to swing from the shoulders and be operated on foot; also three of Hutchinson's cider mills.

J. W. Clark, of Hayward's, Alameda County, exhibits a grain separator and bluestone mixer combined, which was illustrated and fully described in our issue of Sept. 28th last. Messrs. Hunter & Weister also exhibit two grain separators, one intended for work on a farm, and the other for mill work. Mr. Hunter's separator was illustrated and described in our issue of Monday last. J. J. Crowley also shows in operation a separator and bluestone mixer, patented through the M. & S. PRESS AGENCY.

T. S. and T. A. Brown, of Alameda, exhibit a superior field harrow, which has already been illustrated and fully described in our columns. The patent for this invention was obtained through the MINING AND SCIENTIFIC PRESS PATENT AGENCY. Mr. A. Williams exhibits two rotary harrows, which are found very serviceable on ground suitable for their use. F. B. Lamb exhibits a vegetable cutter, and E. W. Walton a weed cutter, with an extra blade. There is also an Eagle hay press on exhibition by H. C. Pratt & Co.; a dog power machine by Mr. Hong, of Sonoma County; a cow milker by L. L. Sawyer; trimming shears by E. B. Hendee; and a lawn trimmer, Hill's patent, which will be illustrated in our columns in a few days.

Hawley & Co. exhibit a Buckeye mower and reaper, with self-rake attachment, and another with drop attachment; also Burdick's National hay cutter. The plow exhibit of this firm was noticed yesterday.

D. S. Smith exhibits the model of a Randall rake; also an improvement on the same. This rake has received the highest premiums at most of the agricultural fairs in California and Oregon. Mr. S. explains its principle by the use of models working on a table in the agricultural department, showing how stones, stumps and ditches are no obstacles to its operation. This rake may be seen illustrated in another column of to-day's issue. Last evening he received the model of a sowing attachment, lately patented through the M. & S. PRESS AGENCY, by Mr. George H. Crocker, of Marysville. By this device, the rake can be converted into an effective broad-cast sower in fifteen minutes—a single running gear answering for both. Olpha Bonner, Jr., of this city, exhibits a rake constructed something after the style of the Randall rake; also a grain lifter, which appears to combine many advantages for the description of work in which such implements are employed.

Mr. L. L. Sawyer exhibits Johnson's patent portable fence, a fine invention recently patented through the M. & S. PRESS PATENT AGENCY, and illustrated and fully described in the FAIR PRESS of Sept. 27th. There are two gates on exhibition, one self-opening, exhibited in model by E. P. Hicks, and the other, a traction gate, ingeniously hung and balanced. John Nestor, of Portland, exhibits an apple-paring machine. T. Locher attracts considerable attention with his steam plow model, which he exhibits at the FAIR PRESS stand. We notice other exhibits as follows: A stable with patent feed attachment, by Benj. Harris; an hydraulic wine press, by Hanscom & Co., of the Ætna Foundry; a stake puller, by Richard Knott, of Suisun; and a Rouse's patent step and fruit ladder, exhibited in model by O. M. Sherman, and an improved grape crusher and stem separator, by T. C. Turriugton.

CLASS V.

SECTION 1—NAVAL ARCHITECTURE.

The fact has developed itself during the past year that ship-building is profitable on this coast. Mates and captains who had become familiar with the demands for carriage of peculiar classes of freight, went in

quite a nnmher of cases, to Humholdt Bay, Trinidad, Pugst Sound, etc., and huilt flat-bottomed vessels; which they were ahle to do so economically as to almost or quite pay for the building, hy the first load taken from the north coast to San Francisco. Many large sea-going ships have also heen built, it appears, at a cost much less than is done even now in the Nsw Englnnd yards.

Thus it eeems that our old and well-eetahlished predicate upon the future incapacity of California for ship-huilding and commerce, is proved to be entirely wrong—though founded on the practical judgment of workmen in "hnckmatack," from Maine.

Messrs. Thayer, Camphsll, McKenzie, Housman, and Nicholas, exhibit shipbuilders' models for small craft, in variety snfficient to rewnrd examination hy adepts in the shaping of water lines. Thayer's model of a schooner in laurel is a gem for an artist—without exception the finest thing of the kind that we have ever eeen, being an ordinary but finely-executed schooner model on a hack-grnnd of knotted laurel, presenting such lines of the natural grain as give the effect of a painted landscape, with hills on the left, towards which the schooner is sailing on the straight grain representing water. For a shipbuilder's or yachtsman's cabinet, such a painting of nature's own execution, brought out only by saw and plane, would be incomparable.

Larsen, Milledge, Gadvich and Castro—all old eailors—exhibit full-rigged vessels, made by them in leisure moments, and under circnmstances whose contrast is noteworthy. The steamer Fusi Yama was mnde by Larsen at Hankow—an American river steamer, with a band on board (a Swiss musio box), shooting hy the river front of that Chinese town. We feel that it is moving, and we catch the spirit and excitement of gay excursionists on board, a nnmher of whom staud ataring stiffly at us, yet in this caae, very naturally, being made of wood. Left high and dry at Hankow, waa Larsen; and we are glad of it, for he has reminded ns in this way that just anch aights are a matter of courae 1,000 milee in the interior of the Flowery Kingdom. What South Sea *lau hallow* cottage Milledge was idling or luxuriating in, when he modeled the missionary brig Morning Star, the record shows not; but there are beantiful pictures of tropical shores and valleys, that the Morning Star recalls—to ua, as well as the modeling did to him, for we have voyaged with Capt. James in the Morning Star, and we find the model exceedingly natural in all exoept its slightly too large and ecarcely sufficiently graceful waist.

Castro, a Greek, who has learned to know the aea and loves it, having become a component of the race of Californiane, fetches up at Belmont, Nevada, with several months of leisure on hia hands—long wintry nights, or the mine at a stand-atill. We have as the result of his honest reminiscenoes of the aea, the large model of the sloop-of-war Nevada, ont of "knot pine," (nut pine), made with hia pocket knife. Commend ua to a aailor that will make a model under auoh ciroumstrnoes. He oan spin good yarns.

The hest full-rigged model in the Fair, is that of Peter Gadvich, whioh is an artistio piece of work, made at Coos Bay, Oregon, where our better quality of coal comes from.

Two screw propellers—the labelled one hy J. E. Kennedy—are designs for more easily outtiug and perfect bladea. O. T. Stacy exhibits Richardson'a ateering apparatua with tongent screws, which makes the rudder ohey instantaneoualy, and prevents the throes of the sea from affecting the ateersman. A. Crawford shows aeveral good things—an ingenious gas generating ship's lamp, two of Massey'a patent frictionless aelf-recording logs (on the propeller principle), and a deep-sea lead, also aelf-recording like the above, so long aa the lead is sinking, but provided with a catch, which prevents any change after the lead has once touched bottom. The most perfect deep-sea lead invented is probably that whereby the degrees of compression are measured and recorded, the instrument being cast away like a bottle, to be afterwards picked up hy others—a practical drawback.

Capt. Wakeman's hoat-detaching apparatus, ahown with a large model of a row hoat, has the merit of great strength, being fastened on tho stem and stern poets. A metallic life-boat, hy L. D. Herrick, called the "Lady Gay," is unwreckable, but is not very nicely made, and embodies nothing new in principle.

To finish up with a glance at the things in this department, the visitor should go into the Art Gallery and refresh his rocollections of the sea hy looking at Denny's Golden Gate from Goat Island (sold for $1,000); also his heach scene near ths Cliff House, and his Breakers on the Bar and Bonita Light-house; Wilson's Storm and Fire; Walker's Helmot Rock, and Sunset on the Coast.

SEC. 2—MILITARY ENGINEERING, ETC.

"*Horrida bella,*" with its chief agent callod villainous saltpeter, and the newly-invented explosivss still more villainous, occnpies a full section in the official catalogue; overehadowing the peaoeful art of blasting, as well as the industry of making the phosphor matches wherewith to light the candlo to go to bed. Pyroteohnics excite in the youthful hrain the passion of destructiveness; therefore belong to military science. We make war upon the quails, who are too aminble to retaliate, even if they could, and upon deer, and Indians where they abound; also upon the ribs and bowels of the earth, which we would tear to pieces till there is nothing left to stand upon, in search of gold, or cven silver, and lighter trssh.

A. F. Potter's smooth-hore cannon and fan-winged projectile is the most noteworthy article in this department. It is something new, and is a highly important invention, if, as appears to be well made ont, the effect of rifling is ohtained without the expenso and retarding influence of internal grooves spirally wound for the ball to follow. Mr. Potter makes the ball do its own rifling in the air. The eame revolving motion, attended with the highest possible accuracy, is attained by means of an attachment to the ball oonsisting of several twisted planes, like those of a propeller, or patent log. From the committee which will take this matter in charge, we hope to obtain some well-made comparative tests to show the value of this invention, which we are told prove everything that could he desired of it in prnctice. Potter's projectile will do not only for cannons, but for amall arms, and especially for shot-guns and revolvers; enabling us to use bullets effectually with the former, and ahot, if we desire to do ao, to catch hirds with the latter. The ehot-gun becomes the most usefnl, serviceable, and the most formidable of weapons. The revolver can he applied with fine sights, and a shonlder-rest, for distant objeots, and used as accnrately as cannonading in proportion to the distance it carries; or it can be used for olose qnarters, and for scattering execution. The small cannon of Mr. Potter is a pntent breech-loader, of very excellent design and workmanship.

Guns, pistols and fishing tackle (hooking and netting are strntegical) are exhibited in splendid cases, showing all the late anhstantial improvements for the rapid use of fire-arms, by Liddle & Kaeding, A. J. Plate and Wm. Rudolph. These cases are worth atudying. Mr. Plate showa, besides shotgnns, Henry rifles, and Tranter & Colt's pistols, one large heavy rifle for great distances, such as Berdnn recommends with the telescope eight. Liddle & Kaeding show a grent variety of new and patented gun inventions, ehotguns without cocks, needle guns, Henry rifles, miniature pistols, etc. Mr. Rudolph shows some fine ahotgnns and his patent lock, which occupies an exceedingly emall space, and has other excellencies already illnstrated and described in this paper. This lock has also been patented in foreign countries by the M. & S. Press Agency.

Cranmer's machine gun, a revolving hattery having three rifle barrels loaded at the breach hy means of an iron cylinder, is a noteworthy invention, and though looking aomewhat complicated to a passer-hy who has not the henefit of an explanation, is as aimple as a common gnn, and in each individnal harrel as effective. The gun will work; will not heat, because at the heating portion of the barrels there is a tank of water that coola them off. When the holes in the cylinder to hold the charge are turned upwards, the loose powder from the powder reservoir falls in, the ball next following, automatically; a rammer then entere, and the next instant the charge is fired off—not in one harrel alone, but in three, or three dozen aimultaneously, or as many as the warrior may desire. The capping is precisely the aame as in an ordinary gun, but is done automatically. Tho Cranmer gun fires 100 volleys per minute, and is eqnal to 100 men, or more, for it shoots with the accuracy of a gun in a vise, and mows down everything before it. In warfare it must come into use, like the Gatling gun, as a defence against cavalry, and against storming parties in hatteries. It has many advantages over the Gatling gnn, as well as over the French slide-plate hreech-loading machine gun.

Saltpster holds its own, as yet, to a degree scarcely perceptihly reduced, while nitro-glycerine, giant powder, gun cotton, and the Hafenegger powder "keep it before the people" that blasting could be done more cheaply by the employment of either of these agencies. The Giant Powder Company put forth the results of the Prussian military engineer corps, pronouncing giant powder as supsrior to gun cotton or hlock powder for pallisades and other wooden obstructions. This powder has already been introdnoed in a measure. Neither gun cotton nor the Hafenegger are actively pnshed at present in this State. But the powder question is one that need not he decided in a day. As the discovery and use of common powder revolutionized the world, though not in a day, so the "coming" blasting agent promises, with the additional application of machine drille, to work a mighty revolution in the facilities for obtaining, out of the hard rocks, the precious and useful metals—in perhaps an increased ratio of plentitude, yet which remains constant in proportion to the advance of the arts and civilization.

The Hafenegger Powder Company exhibit at the Fair two hottles of their blasting powder No. 2, a gray substance resemhling giant powder, the one of a darker hue, which are as safs as wood for transportation until mixed, when they are on a par with common powder as to ignition; but unlike giant powder, are insensible to percussion. A lurking donht in the minds of many as to eafety—easily fostered and kept up hy a heralding of the well known unmanageahility of chloride of potash in the laboratory—has operatsd disadvantageously to the speedy introduction of the Hafenegger powder; hut it would be a real loss to the miner if so powerful and so very cheap an agent as the Hafenegger powder should have to be abandoned on that ground alone. Allowing something for prejudice, it is possible that we may aoon hear more about the Hafenegger powder in the mines. Its extraordinary power is well exemplified in the Fair hy the exhibition of a mass of native copper that was torn open, and of four ⅜-inch iron plates riveted together, that were pierced by the downward force of an explosion.

Matchea are exhibited by A Colsh, of the Paoific Match Factory, where the rounded kind are made and finished into common matches and fusces of superior quality.

The California Powder worka exhibit a fine array of kegs, and samples of blasting, sporting and cannon power.

Church & Clark'e fire works have merits that are better known in California by witness of actual trial, than we can make apparent by a mere desoription of the extraordinary things that are displayed on the southern wall of the Pavilion.

An Earthquake Indicator.

A great deal of fun was created in the Fnir recently, by some wag pinning a label "Earthquake Indicator, Donahne's patent," on the curions apparatus among the achool fixtures, for illustrating the solnr system. This very ingenioua instrument consists of a central sun, about the size of a mnn's head, around which are fixed, on wire, leaser apheros, to represent the moon, earth, Venus, Jupiter, and the other planets which comprise our eolar system. By turning a handle, each of the planets make the revolutions peculiar to it, and the calculations being correct, the instrnment forms a very clear illustration of the movements of the planets and their relations to the earth. But lnst night, a youth with downy mustache, who has been atudying the arts of "gah" in a well known debating clnb, undertook to explain the theory of earthqnakes with this machine. The way he dilated and expatiated on the subject, the hard words he used, which are, and which are not in the dictionary, was excruciatingly amusing to those who were in the secret; but the crowd took it all in as gospel truth, and thought the young scamp was better posted on earthquake matters than either Caxton or Stewart. But after a while the secret leaked out, when the fun hecame furious; and what is still very remarkable, nohody knew anybody who listened so intently to the remarkable lecture on eartl-quakes. The clerks of tho Fair don't know who Donahue the patentee of the Earthquake Indicator is.

The difference hetween men and dogs is, that the latter lovee his friend hetter than himself—the former don't.

Water Assessments and Water Meters.

As there is a water meter in the Fnir, and as the Pacific Coast promises to do something towards eolving this extremely difficult, yet at the same time extremely simple prohlsm, the following summary of Dr. A. W. Hall's paper on the subjsct, from our New York engineering correspondent, will he found to contain interesting information.

Ever since water was first conveyed to cities by artfficial means, thns making it the product of lahor and capiial, and an article of commerce and exchange, the same as gas and flour, there has been a growing demand for a chesp and accurate water meter. One hundred and thirty American patents have been grantsd for water meters.

The adoption of a system of water meters in a city, would be in the interest of the poor, becauss now every house owner has to pay a water tsx, a proportion of which every man who occupies a floor, is oompelled to pay to the landlord—and this tax is apportioned by gness instead of measurement. No matter how oareful he may he not to waste water, he still has to pay his proportion of which his neighhors waste; while this very waste keeps the reservoirs so low that tho second and third floors cannot ohtain water at all.

The amonnt of water that runs throngh the Croton Aqneduct daily, equals ahout sixty gallons per diem to each inhahitant during the rainy aeason, and thirty or forty gallons in the summer months.

All the wnter meters that have come to light, may he classified under five heads, namely: Piston meters, rotary meters, screw meters, diaphragm meters and dumping meters. About 1,000 piston meters are in use in New York, hnt their cost is so great as to preclude their use in dwellings or stores, none but large manufacturing houses and hotels and distillerica, and other estnblishments required to pay high water rates, heing willing to incur the expense. The eheapest one-inch pipe meter (suitable for dwelling houses) yet offered, costs $35 each, and what is considered the standard meter of the country, costs $70 per meter of same capacity. These high prioes and tho complication of the machine with varioua mechanical defects etill leayee the field open for the "coming meter."

In conclnding, Dr. Hall exhibited a meter of his own construction, being what is called a "proportionate meter," that is, one that divideathe water, and measures a small proportion of it to indicnte the whole amount used. The cost of this meter, one-inch pipo, wonld not exceed $5, and a four-inch pipe meter $8. The standard 4-inch meter used in factories, etc., costs $6.50. He also exhibited a modification, the cost of which will not be more than $2.

The Hicks meter is a double piston meter, in which valves, other than those afforded by the pistons themselves, are dispensed with. The Hawley meter, in which an ingenions, and it is claimed, extremely durable form of diaphragm, is used, and the Cochrane meter on the dumping principle, with air valve attached, to nerate the water and preveut a vacnum in the bucket chest; all these were exhibited and explained by their respective inventors.

The I. C. U. Club.—The memhers of this clnb are of both sexes, a great many of whom may he seen at the Fair every night. They are easily recognized; the males by the exquisite curl and gloss of the hair, and the femalee by their airs. The leading memher of the male branch is well and favorahly known at a famoua restanrant on Clay street, where his stentorian commands for "Roast heef rare," "New York plum," and "Indian," have long impressed the patrons of the establishment he gracea with the idea that he is no common man. The leader of the female branch of the I. C. U. Club, acquired her taste for dress—which she exhibits nightly to the admiring gaze of the multitudo—at a famons millinery and dress-making estahlishment on Third stroet. Both these leaders are magnificent specimens of the I. C. U. Club.

Sheeat, a citizen of Alabama, has been appointed Consul to Elsinoro. "Sheets has gone to Hell Señor," is the way an English friend of ours reported it to Don Pio Pico.

A. G. Waterhouse's Mechanical Movement.

There are a couple of small models on exhibition at the Fair, which deserve more than a cursory examinatinn. They represent the head of a ship's rudder, with a novel steering apparatus, and a common windlass-barrel and crank. The psculiarity in both is ths novel and remarkably effsctivs application of ths lever in imparting a rotary motion, which increases the motivs power several hundred fold; a child being able to raise ssveral tons without great effort. Ths principle upon which this valuable discovery is based, is ths use of an eccentrio wheel fixed to the shaft of the crank or lever. The eccentric revolves within a donble circle, cogged within the inner periphery. Ths cogs being a multiple of the circumference of ths eccentric, so that it reqnires soveral revolutions of the latter to make one of the former. Each circuit made by the eccentrio moving ths inner circle ons cog on the onter. By this simplo process thsro is scarcely any limit to the power that may bs generated by a vsry small apparatus. The principle involved, which is quite new, and recently patented, is adspted for any purpose in which a cog wheel is reqnirsd to increase power, whether it bo a watch, a windlass, or ths most powsrfnl crane. The models explaining the new movement ars placed near Fnlda's wine eask, and should be examined by every mcchanic. Engravings aro neccssary to fully illustrate the movsment.

Polytechnic Evening School.

Mr. F. Hsllert's evening schsol for instruction in the advanced steps of industrial mechanics, has received merited rscognition from ths Committee on Evening Schools of the Bosrd of Education, and is very creditibly to the educational depsrtment, which, now a part of our public school system. Mr. Hellert's idea was to impart orally to young men of mechanical ambitions, and to laboring tradesmen, who wsrs desirons of becoming masters in their specisl business, such instruction as would be of the greatest immedists servioe to them. Drawing and geomstry occupy much of thc tims at this school, but the principles of mechanics, undsrlying and applying to every trade, are entered into with a visw to the students requirements. It is impossible to speak too highly of schools of this kind, provided they be so snstained and carried on, as to bs of resl advantage to students, young or old—but to the mentally neglected especially—who wish to become thorough in any special thing; for Americsns are too apt to be superficial, and too lenient of humbuggery outright. Ths teacher should be thoroughly posted and abls to give information ss to the best books or other publicstions upon techuological snbjects, and should rathsr give things of ths workshop than of tbe books. Apprentices, and all young men who ought to bs apprenticss (including everybody) need assistancs of this kind, and the best that can bs affordsd by ths efforts of a liberal Bosrd of Education and Mschsnics' Instituts combined.

Ths hours for instruction are from 7 to 9 P. M. every evening, except Ssturday, at Lincoln School. We understand that there are now forty pupils in Mr. Hellert's hauds.

ENTERPRISE.—Strahls & Hnghes, who have added such an attractive fsature to the Fair, by their California Laurel Wood Palace, intend to make some important additions to that institution, and take it to the Atlantic Ststes and Europe, to illustrate the beauties of California hard woods. This palace has cost these gentlemen upwards of $5,000, and thsy intend to expend $10,000 mors to exteud the employment of onr nstive woods for ornamentsl purposes. The list of thcse woods is not confined to the laurel, but includes maple and birch of several kinds, rosewood, bird's-eye red wood, and several others.

LOCKE & MONTAGUE.—Ths name of this firm has been so long connected witb the stove and metal houssbold ware trade of this city, that one seems to be permanently associated with the other. They are heavy importers aod keep an extensive variety of first quality goods, and can satisfactorily supply the wants of all customers at the most reasonable rates.

Weekly Shareholders' Directory, for Meetings, Assessments and, Dividends.

(Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.)

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DELINQUENT.	SALE
Alleghany Cons., Sierra co., Sept. 21, 30c	Oct. 25	Nov. 15
American, Storey co., Sept. 15, $1 50	Oct. 19	Nov. 4
Black Jacket, White Pine, Aug. 18, 10c	Sept. 17	Oct. 21
Bucklin, White Pine, Sept. 30, 5c	Nov. 6	Nov. 29
Sullivan, Storey co., Nev., Aug. 21, $10	Pay. immediately.	
Cala. Slate, Calaveras co., Sept. 7, $1	Oct 7	Oct. 20
Cherokee Flat, Sutte co., Sept. 3, $5	Oct 6	Oct. 21
Etna, White Pine, Aug. 27, 15c	Sept. 30	Oct 20
Evening Star No. 1, White Pine, Aug. 25, 10c	Oct. 2	Oct. 22
Feamerstone, White Pine, Aug. 31, 30c	Oct 7	Oct. 26
Chloride Flat Cons., W. P., Sept. 16, $1	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c	Oct. 18	Nov. 6
Hearst, White Pine, Sept. 15, 50c	Nov. 6	Nov. 22
Hope Gravel, Nevada co., Sept. 20, $1	Oct. 25	Nov 15
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
Maxwell, Amador co., Sept. 22, $1	Nov. 1	Nov. 24
Metropolitan, White Pine, Sept. 11, $2 50	Oct. 13	Nov. 3
North Bloomfield, Nevada co., Sept. 21, $5	Oct. 22	Nov. 8
North Americ a Cons., W. P., Sept. 27, 2½c	Nov. 1	Nov. 22
Orix. Hld. Tressure, White Pine, Aug. 8, $2	Oct. 4	Oct. 23
Rippon, Alpine co., Sept. 16, 25c	Oct. 20	Nov. 6
Ruthbun, White Pine, Aug. 27, 50c	Nov. 6	Nov. 26
Siempre Vivs, Mexico, Sept. 17, $1 50	Oct. 21	Nov. 8
Silver Wave, White Pine, Aug. 28, 20c	Sept. 28	Oct. 20
San Jecinto, Tin, San Berdino co., Aug 20, 5c	Oct 4	Oct. 18
Senator, Storey co., Nev., Sept 8, 5c	Oct. 18	Nov. 8
Sierra, Douglas co., Nev., Aug. 24, $2	Sept. 23	Oct. 14
Taylor, El Dorado co., Aug. 25, 20c	Oct. 4	Oct. 20
Thunderbolt, White Pine, Sept. 14, 5c	Oct 18	Nov. 6
U. S. Grant, Nevada co., Sept. 21, 50c	Oct. 22	Nov. 13
White Pine Mutual Sept. 15, $1	Oct. 29	Nov. 8
Wells, White Pine, Aug. 10, 30c	Sept. 17	Nov. 4
Wheeler, Esmeralda co., Sept. 20, $1	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

Bureka	Annual Meeting Oct. 21
Gold Hill Cons	Meeting Oct. 20
Glenwood	Meeting Oct. 27
Mineral City, White Pine, Aug. 24, 50c	Oct. 7—Oct. 22
Occidental, Storey co., Nev	Annual Meeting Oct 9
Washtello	Adjourned Meeting Oct. 18
White Pine Smelting	Meeting Oct. 15

LATEST DIVIDEND.

Amador Co., div. $6 per share	Payable October 7, 1869
Alpha Cons., Storey co., Nov., div. $2	Pay. June 19, 1868
Sacon, Storey co., Nev., div.	Payable June 19, 1868
Consol. Virginia, Stock, div. 15 per cent.	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12 1868
Chollar Potosi, div., $1	Payable October 8, 1869
Eureka, div. $7 50	Payable October 8, 1869
Empire M. & M., dividend $50	Payable May 15, 1867
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & N—dividend, $7 50	Payable July 18, 1868
Golden Chariot, Idaho, div. $3	Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c ₰ sh.	Pay. Aug. 26, 1869
Hale & Norcross, div. $6	Payable July 10, 1868
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $4	Payable July 1, 1869
Keystone, Sierra co., div., $32	Payable May 6, 1869
Kentuck, div., $20 per share	Payable Jan. 10, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Unassessable, div.	Payable June 18, 1868
Sand Spring Salt, dividend $1	Payable Jan. 5, 1869
Sanfranco, Silver City, dividend, $3 50	Payable Dec 19, 1868
Savago, Virginia, Nov. dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 60c	Pay. Oct 10, 1869
Virginia & Gold Hill Water Co.	Dividend, payable April 16, 1869
Yellow Jacket, div., $5	Payable March 15, 1869

Those merked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, October 8, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	99	—
Legal Tender Notes	75	76
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & int.	
San Francisco City Bonds, 5s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par & int.	
San Francisco City and Co. Sch'l Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	83	90
Santa Clara County Bonds, 7s	76	77
Sutte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	47	48
State Telegraph Co	25	—
Spring Valley Water Co	63	—
GAS COMPANIES.		
San Francisco Gas Co	34	35½
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	69
Central Railroad	56	—
North Beach and Mission Railroad	68	69
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	36	100
Pacific Insurance Co	107	109
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	90
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	145	—
MINING STOCKS—WASHOE DISTRICT.		
Alpha	14	14¼
Baltimore American	—	—
Belcher	13¾	14
Bullion, G. H	15	15
Crown Point	15	—
Colo (Va.)	—	½
Confidence	22	23
Consolidated Virginia	1¾	1¾
Chollar-Potosi	13	13¼
Caney	1	1¼
Exchequer	5	5½
Empire Mill and Mining Co	20	—
Gould & Curry	71	71½
Gold Hill Quartz	17½	20
Hale & Norcross	123	124
Imperial	33	34
Julia	—	½
Justice and Independent	—	1
Kentuck	168	170
Lady Bryan	—	13
American	—	10
Occidental	9	9½
Opair	20	—
Overman	77½	79
Segregated Belcher	—	7
Savage	42½	43
Sierra Nevada	8	8½
Union	—	—
United States	—	—
Yellow Jacket	37½	38
MISCELLANEOUS MINING STOCKS.		
Amador (California)	29	29
Aurora, White Pine	—	½
Eureka, (California)	220	225
Golden Chariot (Idaho)	10	—
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocolillo, White Pine	½	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, October 9 1869.

Flour, Extra, ₰ bbl	$5 00	@	$5 50
Do. Superfine	4 00	@	4 50
Corn Meal, ₰ 100 lbs	2 00	@	2 25
Wheat, ₰ 100 lbs	90	@	1 85
Oats, ₰ 100 lbs	90	@	1 25
Barley, ₰ 100 lbs	85	@	1 00
Beans, ₰ 100 lbs	2 50	@	3 50
Potatoes, ₰ 100 lbs	75	@	1 50
Hay, ₰ ton	8 00	@	13 00
Live Oak Wood, ₰ cord	9 00	@	14 00
Beef, extra, dressed, ₰ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₰ lb	5	@	7
Hogs, dressed, ₰ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₰ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₰ lb	19	@	—
Do. Rio	—	@	19
Tea, Japan, ₰ lb	75	@	90
Do. Oreon	80	@	1 25
Hawaiian Rice, ₰ lb	9½	@	10
China Rice, ₰ lb	5½	@	6
Coal Oil, ₰ gallon	53	@	55
Candles, ₰ lb	16	@	18
Ranch Butter, ₰ lb	50	@	60
Isthmus Butter, ₰ lb	25	@	35
Cheese, California, ₰ lb	15	@	17
Eggs, ₰ dozen	60	@	65
Lard, ₰ lb	17	@	18
Ham and Bacon, ₰ lb	17	@	19
Shoulders, ₰ lb	—	@	10

Retail Prices.

Butter, California, fresh, ₰ lb	60	@	75
do. pickled, ₰ lb	35	@	40
do. Oregon, ₰ lb	25	@	30
do. New York, ₰ lb	35	@	40
Cheese, ₰ lb	20	@	25
Honey, ₰ lb	25	@	30
Eggs, ₰ dozen	70	@	75
Lard, ₰ lb	20	@	2[illegible]
Hams and Bacon, ₰ lb	—	@	25
Cranberries, ₰ gallon	1 00	@	1 25
Potatoes, ₰ lb	2	@	3
Potatoes, Sweet, ₰ lb	—	@	2
Tomatoes, ₰ lb	2	@	3
Onions, ₰ lb	2	@	3
Apples, No. 1, ₰ lb	4	@	5
Pears, Table, ₰ lb	5	@	—
Plums, dried, ₰ lb	10	@	12
Peaches, dried, ₰ lb	10	@	15
Oranges, ₰ dozen	50	@	75
Lemons, ₰ dozen	—	@	1 00
Chickens, spiced	75	@	1 00
Turkeys, ₰ lb	30	@	35
Soap, Castile and C. O	10	@	12
Soap, Castile, ₰ lb	18	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, October 8, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₰ 100 lbs; Bar, 1@1½c ₰ lb; Sheet, polished, 3c ₰ lb; common, 1¼@1½c ₰ lb; Plate, 1¼c ₰ lb; Pipa, 1¾c ₰ lb; Galvanized, 2½c ₰ lb.

Scotch and English Pig Iron ₰ ton	$32 50	@	$35 00
White Pig ₰ ton	30 00	@	32 00
Refined Bar, bad assortment, ₰ lb	— 03	@	— —
Refined Bar, good assortment, ₰ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04¾	@	— —
Plate, No. 5 to 8	— —	@	— 04¾
Sheet, No. 10 to 13	— 04¾	@	— —
Sheet, No. 14 to 20	— 05	@	— 5¼
Sheet, No. 24 to 27	— 05	@	— 6¾

COPPER.—Duty: Sheathing, 3½c ₰ lb; Pig and Sar, 2½c ₰ lb

Sheathing, ₰ lb	—	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Solts	— 21	@	— 22

TIN PLATES.—Duty: 25 ₰ cent. ad valorem.

Plates, Charconi, IX, ₰ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₰ lb	40	@	— 42½

STEEL.—English Cast Steel, ₰ lb — — @ — 16

QUICKSILVER.—₰ lb — 55 @ — 60

LEAD.—Pig, ₰ lb — 7½ @ — 8

SHEET — 10 @ — —

PIPE — 11 @ — —

SAR — 9 @ — 9

ZINC.—Sheets, ₰ lb — 10½ @ — 11

SORAX.—California, ₰ lb — 35 @ — 40

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Oct. 8, 1869.

We give ths following as an approximate price at which coppsr ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.			Per ton
12 per cent. ore	$24 00	18 per cent. ore		$41 40
13 " "	26 65	19 " "		44 65
14 " "	29 40	20 " "		48 00
15 " "	32 25	25 " "		62 50
16 " "	35 20	30 " "		75 60
17 " "	38 25			

Ores ssaying above 30 per csnt., $2.50 psr unit. Bars at the rate of 13c. per lb. for pure coppsr.

Thess prices, corrected by W. T. Atwood, we believe will be found substantially correct, and can be realizcd at this date.

OCCIDENTAL INSURANCE COMPANY.—It is but a few years since the first bome insurance company was chartered in San Francisco, and now we have a dozen or more—showing the disposition of our people to patronize local enterprise. Among the institntions of this kind which have met with signal succcss, and grown into importance with the growth of our city, is the Occidental Insursns Company. This organization commands the fullest confidence, and is taking a large share of first class patronsge in both fire and mariue insurance.

WINDMILLS.—W. I. Tustin, manufactures at the corner of Market and Ssventh streets, a self-regulatiog and perfsct adjusting windmill that cannot be beat for strength, durability and simplicity. It took the first premium at the former exhibition. We advise those interested in the article to examine his first class mills just as he makes them for actnal service at his shop.

RETURNED.—Dr. J. H. Peine, Dentist, Wedsworth House No. 228 Sush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very hest quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warrauied to give satisfaction.
10v18 6m S. F. HOWLAND.

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germsny, and has held consultations with the following eminent physicians: Drs. Carling Druit, Lee, Parker, Acton, Aitkea, Churchill, Ricord, Velpeau, Boech, Sperino, and Hewitz Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry te ssy, those of Americans. Americens will not now be under the necessity of leeving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Use Pain Killer for Cholera and Bowel Complaints, for Scalds, Cuts, Bruises and Scalds, Old Sores, Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, Sore Throat, Sun burn, Colds, Coughs, Etc.

Use it for any of these, and you will never do without it. Its success as a veluable family medicine has induced others to imitate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

A Family Medicine.—The PAIN KILLER is a purely vegetable compound, and while it is a most efficient remedy for pain, it is a perfectly safe medicine, even in the most unskillful hands. For Summer Complaints, or any other form of bowel disease in children or adults, it is an almost certain cure, and has, without doubt, been more successful in curing the various kinds of Cholera than any other known remedy, or the most skillful physician. In India, Africa and China, where this dreadful disease is more or less prevalent, the Pain Killer is considered by the natives, as well as European residents in those climates, a sure cure.

We have long known the high character of the PAIN KILLER, and that it is used with great success and satisfaction in our best families. It is the favorite medicine of our missionaries in heathen lands, where they use it more than all else together for the diseases that abound in those warm climates. It should be kept in every house, in readiness for sudden attacks of sickness.—*Chr. Press.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

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Capable of taking charge of BLAST FURNACES. Those who have worked in Copperopolis or Swansea will be preferred. Apply by letter, with references, and stating wages expected, to

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MR. BROWNE intends to devote the autumn and winter months to a personal examination of such properties as may be offered, and proposes to go East with them early in the spring.

His principal aim will be to encourage IMMIGRATION TO THE PACIFIC SLOPE, and to promote the investment of EASTERN CAPITAL in all legitimate enterprises that may be committed to his charge.

Surveys, Maps and Diagrams of Ranches, Mines and other Properties,

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Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Tarshish.—*Miner*, Sept. 25: Two gangs of men are to he set at work throngh the winter; one taking out ore from the upper work, and the other running the lower tunnel.

M. C. M. Co.—The ore in No. 3 tunnel is deily improving both in qnelity and quentity. Progress this week satisfactory.

The Glohe tunnel is still in ledge matter, and making good headway. No novel indicetions, but symptoms encoureging.

Leviathan.—We saw some samples of very rich copper ore which was taken from this mine this week. Globules of bright native copper stood out all over it. We learn that the body of ore is raising so as to show a large quantity easy of extraction.

AMADOR COUNTY.

Kennedy.—*Ledger*, Oct. 2d: We lesrn that during the past ten days very rich rock has heen struck in the mine.

CALAVERAS COUNTY.

Mining Items.—*Chronicle*, Oct. 2d: The Union shaft, on Stockton Hill, promises richly.....Brackett & Co. are opening ground for extended operations....The Palomo ie turning out coerss gold....Alexander & Co. have their new hoisting works ahout reedy. They will be run by a centrifngal wheel, the water to be taken from the same pipe that snpplies their quartz mill.

Railroad.—Chepman, Hopper & Chapman heve their steem hoisting works nearly reedy, end we mey soon look for large returns, as the average rock worked has been $50 per ton. The Petticoat, Eherhardt & Co., Lewis & Co. and Nimtuck, are all in good rock, and employing a large nnmber of hands.

French Hill.—Some parties have found the extension of the old channel. This secures them their pile, as the diggings in this hill in early days were among the richest in the Stete, $94,000 having been made out of a claim twenty feet squere.

EL DORADO COUNTY.

Dry.—Plecerville *Democrat*, Oct. 2d: At Kelsey, Spanish Flat, Georgetown, and in fect the entire ridge between the South and Middle Forks of the Americen river, there is uo water for mining purposes. There are a few places where men are doing well; among them Jones Hill and Georgia Slide, a few miles northeast from Georgetown, are the most noted. Good paying cleims have been opsned in what was formerly known as Castle Hill, and we expect to hear good reports from that vicinity eo soon as the rains come and water can be had. Ten thonsend inches of water could be sold deily in this section if it could be hed; and it can be hed at least nine months in the year if capital could be secured to constrnct a ditch. There is uo investment in the State that would pay better then a ditch on this ridge. The water is there, and only waiting for an opportunity to run down this way. The mining ground is here, and only waiting water.

Marshall & Co's Tunnel.—On Monday we visited the above tunnel, near Kelsey. It is now in 200 feet. In running that distence they have passed through first rate indications for a paying mine.

Oregon Hill.—Several years ago, Jones & Co. reelized $50,000 from their cleims on the above hill. There has not been much work done on it since until about six weeks ago, when Shepherd & Co. commenced getting out some very rock. It appears to be detected howlders, from the size of a peck measure to severel tone in weight. Some of it, of a porous oheracter, ie very rich, yielding as high as $1 per pound of rock. The whole will yield an average of $30 or $35 per ton. The company is running two tunnele to strike the lead lower down. The upper one is to the load, which is about 2½ feet iu thickness, and prospects well. The company had about eight tons of rock crushed a few weeks since at the Pacific mill, which realized $240. This was from neer the surface.

Taylor Mine.—This mine, two miles from Georgetown, bids fair to become one of the best paying in the conuty. The company are making extensive repairs and enlerging their mill.

Nugget. — Auburn *Stars and Stripes*, Sept. 30: Rev. N. R. Peok informs us that a Mr. Woods recently found a nugget of pure gold, worth $100, in his claim near Georgetown. It was from a seam claim of decomposed quartz.

NEVADA COUNTY.

Good Clean Up.—Grass Valley *Union*, Sept. 29th: The Ideho mine yesterday sent in to Findley's bank, gold to the value of $12,000, the proceeds of two weeks run.

Dromedary Mine.—Grass Valley *Union*, Oct. 3d; The Dromedery hed a clean-up on Seturdey. The yield of twenty-five tons of rock wes about $1000. The compeny working under leese, say the ledge is looking well es they go down. The mine is worked more with a view to develop it then to meke money, at present. It is paying expenses, however.

Moore's Flat.—*Transcript*, Oct. 3d; The Eagle Mining Co. are at work and expected yesterdey to discharge a forty keg hlest in their henk.

Steep Hollow.—*Gazette*, Oct. 1st; We were shown yesterday a nugget weighing ten ounces, and velued at $180, from the gravel cleim of Wells & Co.

Union Hill.—Grass Valley *Union*, Oct. 5th: This mine continues paying a handsome profit over working expenses. The yield for September was $10,500.

The Pittsburg Mine.—*Transcript*, 5th: A week ago, in the 320-foot level, the ledge was strnck one foot thick and exceedingly rich. Yesterday, every piece of rock taken out wes filled with rich sulphurets and free gold scettered through it. The rock breaker, which has been out of order, is now repaired, and the mill will start today, and keep running night and day.

Meadow Lake.—James Jeffrey, recently from Excelsior, informs us thst Churchill & Dolan have made satisfactory tests of the nsw process. They havs been working the Monitor mill, which has five stamps end is run by water power. They roast the rock in a squere furnace, after which it is discherged into a tank, where it is subjected to the action of a solution the composition of which is known only to the proprictor of the process. It is thsn crushed hy ordinary mill process, end most of the gold is saved in the battery. The expense is $8 per ton. The tailings fail to show the color. The Mohawk & Montreal Company are to put up three of these furnaces, capable of roasting 20 or 25 tons at a charge. The Celifornia mill commenced on 200 tons of rock from the Excelsior mine on Thursday, which will he worked by the H. H. Hartley process—the rock to be first crushed and then chemicals applied. Hartley cleims that his process can be applied et 25 cents per ton. The Live Oak Compeny is to have 20 tons of rock crushed from the Pine Tree ledge, and the Wisconsin 10 tons treated hy the Chnrchill & Dolan process. Mr. Nolin is taking out fine looking rock, and will soon heve a orushing. The Ophir Company's ledge peid from the croppings. The compiny now has a seven-foot ledge, every foot of which peys.

PLACER COUNTY.

Rising Sun.—Nevade *Gazette*, 5th: We rceeived a note yesterday from one of the owners in the Rising Sun mine, neer Colfax, who informs us that the prospects are flettering. A crushing of 18 tous of rock, from the lower level, just opened, yielded $1,431.

PLUMAS COUNTY.

Quartz.—*National*, Sept. 25th: The Psnnsylvenia mill, which has heen idle for some months, commenced crnshing rock from a new ledge, near the Indian Valley Co's mine, on Tuesday. The New York mill, now owned hy Mr. Traugh, will commence crushing egain on Monday. The Crescent mill is undergoing repairs. The Caledonie hss chenged owners. Judkins & Kellogg's mill is making averege returns. Bachellor is crnshing quartz from the Green Mountain ledge, and ie getting good pay. We heer thet the Memmoth mill at Jamison has again commenced crushing.

Sold.—The Caledonie quartz mine and mills, near Ronnd Valley, has hcen sold to Mr. Lovell White, of San Francisco, for the sum of $10,000, and other valuable considerations.

SAN DIEGO COUNTY.

New Mines in the Coast Range.—The S. F. *Bulletin* eays: Reports are pnblished of the discovery of plecer diggings and gold quartz in the coast renge near San Diego end San Bernardino, respectively. The "prospects" are said to be very favorable for wagee for a limited nnmber of people, and there is no reasou to expect more than this. As early as 1842 a lot of 20 ounces of gold was forwarded to the Philadelphia Mint from the plecers of San Francisqnito, ahout 35 miles northwest from Los Angeles. These diggings were worked until 1846, yielding $6,000 or $8,000 a year to the labor of a few Mexicens. In 1848, before the discovery of gold in the Sierra Neveda, several other finds of gold and silver were reported, some of which were located near Oakland and San Josć.

YUBA COUNTY.

The Pennsylvania Mine.—*Appeal*, Sept. 29th: We understand that the Pennsylvenia mine at Brown's Valley, hes discontinued work till next epring, in consequence of demages received to its machinery, emounting to severel thousend dollars.

In reference to the mine nemed above, the same journel of Oct. 2d, says: A correspondent writes as follows: "To discontinue at once and without notice to the shareholders, all work at e quartz mine, hoist up pumps and pipes, and ellow the mine to fill with water, is a matter of too greet importance to the shareholders not to make it desirahle for them to be informed of the real motives which heve determined the Board. The mine, for the last few weeks, has furnished enough good quertz to rnn in day time the 16 stamps, and it was generally understood that the claim was sufficiently dsveloped to supply the stemps day and night. There is a substentiel ledge of rich quartz in levels nine and ten, and there is also a fine ledge at the hottom of the shaft. In short, it is said, that with a different set of miners, at a monthly expense of $3,500, the mine could be made to yield, from this very day, at least $10,000 per month, and it is also asserted, that a dozen men could be found, who would swear to this. It is hoped that Americans will soon find it necessary to prove that they are still masters on their owu soil."

Arizona.

England Gulch.—*Miner*, Sept. 18th: We were shown this week by William Kelley, $37.45 in cosrse gold, the proceeds of 240 huckets of dirt taksn from the old England Gulch by two men. Last week the same two men rocksd out the sum of $70.

Big Bug District.—Mining property helonging to the estate of the late Robert Smith, sold by auction Saturday, brought good prices. L. W. Worth hought ths Bellhaven, Manhattan and Weehawken claims. Jessie Jackson, the Wide West, and N. Lacoke, the Badger. The ditch property was bid in by A. Burroughs.

Quartz.—The quartz miners of Walker's and Walnut Grove districts are seid to be taking out very rich ore....Work upon the Sterling mine has been suspended, for what reason wo do not know....At last accounts, hoth mills at Wicksnburg were running.

Colorado.

Summit County.—Central City *Herald*, Sept. 18th: Thos. McGowen, recently from Summit, reports gulch mining successful dnring the season. He will return in ths spring. He has diggings thsre from which hs expects an ounce a day. Donnelly & O. Donnel heve several lodes which have asseyed hig. Bnt little has been done yet in quartz mining. Rich lodes have been discovered, hut capital has not yet been invested to develop them. Mr. W. Ripping is putting up rsduction works at Lincoln City, in Frenoh Gulch.

Coaley Mine.—*Register*, Sept. 25th: Mr. Eugene Teats gave us a tablespoonful of ore the other day, from the Coeley. On being melted, it gave something over two ounces of silver. The assay returnsd $26,395,80, coin value, per ton.

Items.—Collom's smelting works, at St. John's, will he ready to run in two weeks.....Ore from the depth of 120 ft., assayed the other day $900 per ton....N. W. Robinson, from Burlington, Vt., is going to drive an 800-ft. hole for the Bullion-Incas Co. with the diamond drill....We saw 6¼ ozs. of gold worth $140, which was washed from three pans and a quart of decomposed ore from the German lode, owned by L. A. Klein....Consolidated Gregory is raising quantities of fine looking smelting ore, The stamp rock holds about as nsual....Pay in the hottom of Pleasant sheft is eight feet wide, and the ore runs about eeven onnces per cord....Judge Ginn and partners are down 15 ft. in the Bntler lode on Gunnell Hill, and have a wide vein of rich looking ore. A uew lode 200 ft. above, is turning out rich.

Idaho.

Boice County.—*Statesman*, Sept. 28th: A new quartz enterprise is in progress neer Pioneer. Mr. I. T. Stohbard yesterday presented us with epecimens of rich ore from the Dnncan and Justicia ledges. He hes just returned from building calcining furnaces and a cupel. He informs us that the Superintendent of the works ie an experienced emelter from Swansea. The results of the undertaking will he known in a few days, and if successful there will he from twenty to thirty cupels in full hlast during the ensuiug summer. Mr. S. says there are at least ten thousand tons of ore in sight which assays from $179 to $2,400 per ton.

Alturas County.—Rocky Ber correspondence of seme; Little more quartz mining will be done here this fell; nearly ell the miners having left for the nsw mines in the north. At Red River, Mr. McNelly, of the Cosco compeny will kesp his mill mining ell winter. At Yuha, E. C. Atkins is working the Atlanta with his usual success on *third class* ore most of the time. Wm. Clemens is rnnning his arastra on "Minerve," and "Varieties" ore, and meking money in his quiet way. By the way it is reported thst Dr. Bishop has organized a compeny in London on this "Minerva" with a capital of $100,000, cash all paid np, to commence work early next spring. If this be true, I congratulate our English friends on having a mine that will pay dividsnds from the start.

Owyhee.—*Wave*, Sept. 30th; The Ida Elmore hes adopted the contract system for sinking and stoping. The lower level is represented by the miners to be the richest point yet found in the mine, and ore more abundant.....The sale of the persoual property of the Oro Fino Company, on Setnrdey last, took place according to announcement, and everything went at ruinously low prices....Another contract for stoping has becn let in the Golden Chariot mine at $68 per fathom, to Keif & Co., hsing $2 less than the contract of two weeks ego. The chief object at this time, was to clesr the way for a winze south of the main shaft and ahove the seoond level.

Long Gulch.—Messrs. Sayre and Firehengh have struck en extension of the ledge below the Monntaineer Co's tunnel, on the north side of the gulch, which is represented as extremely rich. We have conversed with parties who estimate the vein at two fest, and that it contains $200 rock.

Loon Creek.—A correspondsnt of the *Wave* writes from Idaho City, Sept. 21st; "I left Oro Grande on Monday; there are twenty or more claims now running, and all paying. Some large piecee are being taken out occasionally, ranging from $9 to $130. I brought in ths $130 piece this trip. It came out of Chepin & Co's claim, No.9, ahove the discovery."

Another writes from Oro Grsnde, Sept. 25th: "The minss, so far as prospected, ers only in the creek. For four miles the creek has been sufficiently worked to settle the fact thet it will richly pay. The gold is coarse, from five cents to five dollars. One nugget weighing *seven ounces and a half*, was found in Foster's cleim in the grevel two feet from the bed rock. The gold down the creek becomes finer. The great troublo is, the diggings ere very deep and heavy. This has prevented a thorough prospect of the camp, as the men were afraid that they would be unahle to *prove* their gronnd before snow, end they would be forced to winter hsre, without means to buy provisions. Another season will show that this is one of the richest camps yet struck, elthough its extent may not hs so great as many anticipeted. There will be room for 1,500 or 2,000 men. Old Nate Smith returned ou Thnrsday from a prospecting tour and reported having struck new diggings. Immediately the town wes alive with men and every one was excited. Yesterday 300 or 400 men started for "Yellow Jackst Creek." Smith believes it will hc a sscond Boise Basin.

Loon Creek Dust.—Another item in the seme journal is as follows: Some of the newspapers are unconvinced yet as to the Loon Creek Minss. Such should have seen the dust brought into the *Statesman* office ycsterday, hy Dr. Betts, recently from there. It is the finest lot of dust in appeerance and quality ever found north of California, except perhaps that from Kootenai. One elug weighed over two ounces, and there were many of three and five dollars. The Doctor eaid he had eeen one weighing $135.

Loon Creek Mines.—*Avalanche* Sept. 25th: From all we cen gather relative to these mines, we infer that they fall short of early expectations. The mining territory seeme to be limited, and it is improhable thet gold exists to any extent outside of the districts already prospected, which embrace a narrow strip of the flets and creek bed, for two or three miles. Bnt there would seem to be no question that some of those claime are very rich.

The *New North West*, Deer Lodge, Montana, Sept. 24th, has the following: On Sunday, John Baker end several others returned from the Loon Creek mines. They report the number of claims limited, and hut few opened. Claims that were held at $1,500 on their arrival, were afterwards sold as low as $100. Provisions wore scarce and high, and a great number were leaving the mincs disappointed.

Montana.

THE LITTLE PAYMASTER LODE.—Helena *Gazette*, Sept. 23d: Messrs. Vivion & Cooper have sunk three shafts respectively, 65, 50 and 40 feet deep, besides several less shafts, all combined, exposing over 1,000 feet of the ledge. The vein has a width of from two to five feet. About one year ago, 50 tons were hauled to the L. X. L. mill of J. C. Ricker, which yielded $1,200, or $25 to the ton; a few months later, 80 tons were crushed in the Greenhorn mill, near the lode—ten stamps—which yielded $12 per ton; last Saturday, a clean up from the same mill of 25 tons, returned $30 to the ton, currency. We weighed the retort from this last run and it comes fully up to the figure given. The proprietors design putting up machinery on the ground. There is a splendid site for a large mill within 400 feet of the discovery shaft.

SNOW SHOE GULCH.—The Williams & Parnell Co. are taking out from $7 to $8 per day to the hand. They have plenty of water, which, it is expected, will last all the season. There are acres of ground as yet untouched.

HIGHLAND GULCH.—Cor. of *New North-West*, Sept. 24th: The Highland Gold Co. purchased a quantity of silver ore from Day, Harvey & Co., Moose Creek, for $3,500, on which the mill is running. The lode from which this ore was taken, is known to be one of the richest in the Territory. Wash Stapleton, of Argenta, bought 10 tons, for which he paid $100 per ton on the ground, and which he freighted to Argenta to be worked. It is probable there will be machinery put up next spring.

The Only Chance quartzes are running with gratifying results. A sale was recently effected; Flowers, Hines & Crisp purchasing Nevins & Farr's interest.

Johnny Kahn & Co. discovered a short time ago a new streak in the main gulch, from which they are taking from $400 to $800 to a set of timbers.

Nevada.

COPE DISTRICT.—The White Pine *News* of Oct. 2d, says: We have had eight of a man from Cope. He says there is one good claim there, and Atchison and Drew will do well with their mill. The Placer diggings are not properly diggings at all—it has not been demonstrated that any money can be made though 'colors' are found. In Elko he met a large force returned from Cope, all ready to part with fine fortunes in that district. He says Cope may turn out gradually to be a good camp; but there is nothing now to indicate anything better than one good paying claim in the quartz."

HUMBOLDT.

RAILROAD DISTRICT.—Elko *Independent*, Sept. 29th: The copper mines equal those of Battle Mountain. The silver mines are on the same range of mountains as those of Mineral Hill. The tests made of the copper show forty-four and a half per cent. of copper and seventy dollars per ton in silver. Selected specimens of the copper ore assayed as high as sixty per cent. Railroad District seems to have been appropriately named, having the line of the railroad as one of its boundaries. The distance from the mines to the nearest point on the railroad, does not exceed twelve miles. The owners have received an offer from an English company for two of their copper lodes, which they refused. They intend shipping ore to market.

REESE RIVER.

AUSTIN.—*Reveille*, Sept. 24th: "We miss the fellows that erewhile loafed about the street corners. A more earnest and better state of affairs now exists in this city. It is no longer a paradise for idlers. Nearly every man in Austin is at work, earning good wages and receiving prompt pay. One can scarcely find an absolutely idle man. Many are mining on their own account. We hear frequently of rich strikes made by these little parties of "chloriders."

BULLION—for the week ending Sept. 25th: Manhattan Mill, 9.816 ounces. Mettacom Mill, 6,172 ounces. For the week ending Oct. 2d: Manhattan Mill, 13,180. Mettacom Mill, 12,000 ounces.

LANE AND FULLER, same 29th: The report of this company for the year ending July 1st, 1869, shows that its mines have produced 1,029 tons and 558 pounds of ore, which gave a yield at the mill of $224,050.38, an average of $217.68 per ton. The main shaft has been sunk 445 feet; 3,282 lineal feet of levels have been run. The total receipts of the company were, $251,554.56; expenditures, $212,823.08.

CORTEZ. — 27th: Reports encouraging. The Wenban Co. employs fifty men. There are a score of prospectors in the hills. A ledge or deposit of copper ore has been located near Crescent Valley. At points it appears to be twenty-five feet wide.

MOREY DISTRICT. — Correspondent of *Empire*, 28th; Since Mr. Ogden bought the mines, not much has been done; owing to the White Pine excitement, which stopped the Hot Creek mill, (then rebuilding), and left no place to reduce ore. Now, however, Mr. Ogden has sent five tons of China-mined ore to Austin—120 miles—for reduction, estimated to yield $300 to $500 per ton.

SPRING VALLEY.—*Empire*, Sept. 21st: Small quantities of selected ore, reduced at the Austin mills, have yielded in some cases as high as $800 per ton. Negotiations are pending for the erection of a twenty-stamp ore-mill in the valley.

The same of 22d, says: A clearheaded, cool, and experienced acquaintance, just from Spring Valley, says the ore is rich, but that it is not yet established that there are any regularly refined ledges. Little work has yet been done.

The *Reveille* of Oct. 2d, learns that a very rich strike has been made at the depth of fifteen feet from the surface—the ore being a fine chloride, in which horn silver was abundant.

HOT CREEK.—Letters from "Singleline" to *Empire* of Oct. 1st: The "pure metal" is the most wonderful silver ledge I have ever seen. It crops out for 800 feet from 2 feet to 100 feet high; it is from 100 to 150 feet wide; in this body of quartz are three strata of metal-bearing rock, which vary from ten inches to ten feet wide—oftener feet than inches; it stands perpendicularly, extending due north and south, up to the southeast face of Rattlesnake mountain, and is cut in two by a natural cut, or cañon, of nearly perpendicular sides, and it can be seen with the naked eye for twenty miles. Ores assay in Shermantown $694 to the ton, and choice pieces in San Francisco, have given as high as $1,062. In my estimation there are thousands of tons of $100 ore on the top of the ground.

BATTLE MOUNTAIN.—*Reveille*, Sept. 29th: The Supt. of the new Co., has already shipped 11 tons of ore to S. F. Co., and will send forty more this month. It contains 30 per cent. of copper, and silver, up to $38 per ton.

WASHOE.

LADY BRYAN.—Gold Hill *News*, Sept. 27th: New mill started yesterday, and works to perfection. First, a Blake's rock breaker of the largest size; then two 5-stamp batteries capable of reducing 30 tons daily; then four of McCone's pans, each of which works 5,000 pounds at a charge, every 4 hours; then two huge settlers, in diameter 10 and 9 feet respectively, and 3 feet deep. Plenty of space under the pan-floors and batteries. All told, it is the best mill of its size in the State. The mine yields 60 tons per day, averaging $30 to $40.

YELLOW JACKET.—The south mine yields 160 tons per day, chiefly from the 800 and 900-foot levels. This pays all current expenses.

SIERRA NEVADA.—Ore improves as developed. Mill steadily at work and dividend regular. Same of Oct. 4th says a new vein has been struck.

HALE & NORCROSS.—The yield of ore is 145 tons per day.

BELCHER yields daily 20 tons of $30 to $160 ore.

CHOLLAR-POTOSI yields 175 tons daily—and ore improving. Same of Oct. 4th: Yield, 130 tons of $50 ore.

OVERMAN.—Winze completed, connecting 400-foot and 500-foot levels, giving good circulation of air. Yield is 25 tons of $20 ore.

VIRGINIA CONSOLIDATED.—New shaft is 335 feet deep—bottom hard. Same of Oct. 4th says: Shaft, 347 feet; rock, softer.

OPHIR.—Rock softer and indications more favorable. Same of Oct. 4th says: The drift west is in 643 feet.

JUSTICE AND INDEPENDENT.—Same of Oct. 4th: This mine shut down, for the present, on Wednesday.

IMPERIAL-EMPIRE.—Shaft nearly cleared out. Sinking will be resumed in a week.

GOULD & CURRY.—The average yield during the past week, from the old workings, at the upper levels, was 43 tons per day, of ore which yielded an average assay of $49 per ton. The prospects in the drifts, at the 7th or lower level, are not good.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, Oct. 2d: Now that White Pine is happily rid of croakers and do-nothings, and all are earnestly engaged in the development of our mines, a better feeling is manifested among our citizens. A feeling of entire confidence in the permanency and extraordinary richness of the mines pervades the community, and a firm conviction prevails among all classes that next season will be one of greater prosperity in this region than any yet enjoyed. Everything is busy, and before Christmas there will be 200 stamps running. Besides this increase in our milling facilities, there are a good many small furnaces under construction for smelting the ores of the Base Metal Range.

ITEMS.—*News*, Sept. 28th: Wooloomooloo shaft goes steadily down. It is now between 60 and 70 feet in depth, and the owners think the signs are improving.... In the Edgar, fine chlorides are found in all parts of the ledge yet exposed, and the thickness of the ledge is not known, for no foot-wall has yet been found....Tom Paine vein is now proved rich to the depth of 50 feet and the length of 60 or 70 feet.... Same of Oct. 2d: Rich strike in first extension of the Sheboygan ledge. Mammoth mine ledge 15 feet wide....Sagebrush sent 100 tons to mill, which yielded $150 per ton....*Empire*, Sept. 26th: The Prima Donna, Pride of the West, Argentine and Sierra Leone, four mines of the base metal order, three-fourths of a mile north of Swansea, were yesterday purchased by Dr. S. A. McMeans, Marshall Bryan, Dr. L. C. McKenny, and a Mr. Miller....Sixty-six hundred pounds of Emersley ore made a bar worth $467, which was shipped yesterday to Chicago....29th: Ditch to supply Stanford mill with water was commenced yesterday....Oct. 1st: Pogonip & Othello has 1,000 tons of good milling ore—much of it of a high grade—on the dump.... Silver Wedge shaft, near Hidden Treasure, is down 50 feet.

MILLS AND FURNACES.—*Empire:* Every part of the splendid Stanford mill was designed by W. H. Patton, who quietly says he has had his own way, and if everything is not right, there is no one but himself to blame. It is expected that the mill will be running in two weeks. It cost about $75,000; and will add to the bullion shipment of White Pine $30,000 per week....Bartlett & Vreeland, representing Boston capital, yesterday broke ground for a 10-stamp mill at Swansea. The machinery has all arrived at Elko, and the building is to be pushed rapidly. The mill is expected to steam up in 30 days....Freiberg is a new town in the cañon between Babylon Hill and White Pine Mountain. Several smelting furnaces are being erected there....A new furnace is going up near the toll house. ....Brook & Rathburn's furnace goes into operation to-day.

OUTSIDE DISTRICTS.—*News*, Sept. 28th: Robineon District is looking better every day. Comfortable houses are going up. Sam. Brannan's company is the one which gives back-bone—for it will have a mill ready to run in three weeks. A small furnace is building for experiments' sake.... Sacramento District is slowly improving. ....*Empire*, Oct. 2d: Davis & Martin's mill in Montezuma City, Patterson District, is in operation, and the rock turning out well. First shipment of bullion by Wednesday next....Considerable work has been done on the Nevada and Genie ledges, Bald Mountain District, 70 miles south of Elko.

Oregon.

CASCADE MOUNTAINS.—Dalles *Mountaineer*, Sept. 24th: Mr. Alex. Rogers and party left the Dalles about the 25th of July last, and traveled along the east side of the Cascade Mountains to the neighborhood of the Three Sisters, where, on a small stream running west, supposed to be the headwaters of the north fork of the Umpqua, they found placer diggings that will pay from $5 to $30 per day, with ordinary sluice-boxes. They continued further south, when coming to a new-made trail, they followed it up the mountain, and found three men engaged in quartz mining, using a large iron mortar to grind the quartz in. These men were not very communicative. The quartz in sight appeared rich in gold. They also found placer diggings within 150 miles of the Dalles, to which place Mr. Rogers intends returning.

Utah.

CLIFTON DISTRICT.—The Salt Lake *News* says the ledges in the Deep Creek Range are well defined, and can be traced for several thousand feet. There is a variety of ores. Assays of galena ores taken from the top of the ground run from $75 to $100 per ton. There is an abundance of wood and sufficient water for milling purposes.

ANOTHER GREAT BLAST IN GRAVEL.—On Wednesday another great blast of 37,500 pounds was set off, with better success even than was anticipated, as we learn by the telegraph—probably in the Crary & O'Brien claims, where a similar blast was made eight months ago.

Pracy's Governor.

We herewith give an illustration of Geo. T. Pracy's steam engine governor, patented through the M. & S. PRESS Patent Agency in 1868, but which has been slightly modified and improved in the elegance of its construction since published in the last volume of the PACIFIC PRESS. Mr. Pracy, who is now one of the longest, actively engaged machinists in San Francisco, has made a very liberal and worthy exhibition in the Pavilion, including a large number of various sized governors, one of which, richly silver-plated, is shown in the inclosure of the PACIFIC PRESS office.

This governor is simple, strong and cheap, and is meeting with larger sales than any other ever invented on this coast.

The engraving shows the regulator with the arms extended, as if in rapid revolution.

The balls are confined by jointed arms, hinged at the top and bottom, and having a knuckle-joint in the center. The slack is taken up and the valve of the regulator opened by the action of gutta percha springs, situated in the cylinders or pots on the right and left—operating by the plungers which are connected by lugs to the lower portions of the arms.

It is suited to any rate of revolution. The speed of an engine can be quickly adjusted by turning set-screws on the bottom of the cylinders which operate on the rubber springs.

Mr. Pracy is agent for the celebrated tools of Lucius Pond, of Worcester, Mass., and Tuft's patent shears, which are on exhibition near Pracy's engine. They are worthy of special examination by machinists. Further information of Mr. Pracy's works will be found in our advertising columns.

VIRGINIA AND TRUCKEE RAILROAD.—The local impression, sustained by the Reno *Crescent*, is that the Bank of California managers of this road do not care to complete it any further at present than to Carson, where they will obtain their wood and lumber by the Ives Lake Tahoe grade. The Carson *Appeal* says the road is to be put through to the Truckee without delay. So easy is the route from Carson to the Truckee, and so obvious the advantage, that the road will undoubtedly be completed to the meadows at an early day.

THE GREAT MISSISSIPPI BRIDGE AT ST. LOUIS is progressing very rapidly towards completion, under the energetic hands of the engineers in charge. Since June, from 1,000 to 1,500 workmen have been constantly employed. Capt. Eads furnishes a full report of his methods of fixing the piers, lowering the stone, constructing air chambers and air locks, sinking cisterns, etc., in the Missouri *Weekly Republican*, of Sept. 29th.

BREAKING off a bad habit gradually is generally found to be about as encouraging as pinching off one prickle a day, with the view of exterminating a Canada thistle.

THE most profound fools assume the greatest gravity, while the really wise man has his face always radiant with smiles.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

A. T. DEWEY. W. B. EWER.

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San Francisco:
Saturday Morning, Oct. 9, 1869.

Galena from Salt Lake.

Mr. Woodhnll, of Little Cottonwood Cañon, thirty miles sonth of Selt Lake, has presented us a specimen of galena ore which we heve pleced on exhibition, and which is remarkahle for heing a very pure galena, assaying nniformly throughont the vein ahont $100 to the ton. It is fonnd thet sixty miles of wagon and 600 miles of railroed transportation does not consume the velne of the ore, which is at present shipped raw, needing not even concentration. The vein ie three feet thick, ie opened to 100 feet depth, end is eitneted high end dry in a monntain's side—as good a piece of property as can he desired. The lead is worth, besides, $50 per ton. The market price for ore of this description, on the wharf at Sen Francisco, is one doller per onnce for the silver it assays, and seventy-five cents for every per cent. of leed, provided it has the pnrity of 70 per cent. of lead. Mr. Woodhnll, who is an old emelter, reckons that in emelting there is a loss of ahont 10 per cent. The gangne is limeetone. A Philadelphia company which emelted in the vicinity a year ago, has drawn off, and Mr. Reese, the smelter, is engeged in making fire brick, et Salt Lake City, for Captain Dey, of the Stockton, Utah, lead mines.

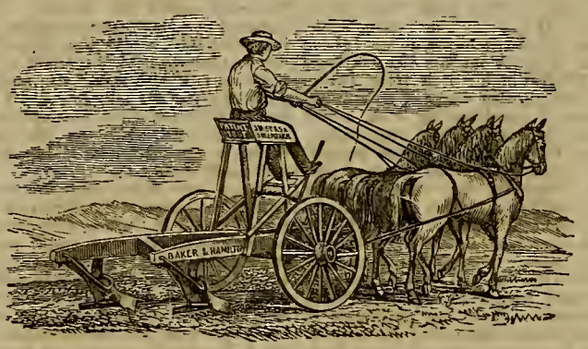
The Connor property is now held end managed hy a Chicago compeny, for whom Captain Day is soon to hegin emelting by a new process invented in Chicago. The Stockton ores assey $40 to $50 per ton, and the mines are ferther off from the railroad.

The California Trust Company.—There ie no institution in the city of San Francisco that is doing better service for the commnnity, and so nnobtrusively, as the California Trnst Company. It performs duties which it would be extremely difficult to find others to do es faithfully, cheaply, or well. For a mere trifle it takes responsihle cherge of all descriptions of pnhlic or privete papers, jewelry and plate, and keeps them inviolehly eecret end perfectly eecure in a fire, hurglar and earthqueke proof safe. It condncts a hanking bnsinese in any currency depositors may elect, peys a liheral interest on money deposited, collects bills and accounts, and acts as agents for tho transaction of all kinds of legitimate business. Ono scarcely knows the extent of the utility of such e well officered corporation till ite powers are tested. Wo strongly recommend the California Trnst Company as strictly reliable, efficient and moderato in charges.

Agricultural Implements—Their Invention and Manufacture in California.

Prominent in almost every brench of the agricnltnral department of the Mechanics' Exhibition, we find articles exhibited by the enterprising firm of Baker & Hemilton, of this city. The foremost among the articles entered by these gentlemen, we ere pleased to he eble to eay, is e Californie invention, eo widely introdnced on this coast that an epology would he dne from ne for illnstrating it in these columns were it not for the nnmerons visitors which the opening of the Pecific Railroad hes bronght to onr Pavilion, and the nnmerons copies of the Press which are heing daily sent to all perts of the Union and to Enropean conntries.

The Sweepstake Gang Plow, here represented, was patented by Mr. Snrsa several years eince, and is made et San Leandro by the Sweepstake Plow Company. It ie the gang which is most generally in nse on



THE SWEEPSTAKES GANG PLOW.

this coast. They are simple; will plow from two to ten inches deep, end any boy can plow with them. The manufactnrere hsve made over fifteen hundred of these plows, which are nsed ell over the coast. If any pert should wear ont, an exact dnplicate can be hed et the factory. They also exhihit two single plowe—one for adohe and the other for stnhble lend.

Another California article exhibited hy this firm, ie an ingenions power seed sower, called "Baker & Hamilton's California Gem Seed Sower." It throwe the seed like a man sowing with hoth hande, and by the nse of a lever one can sow on either side of the wagon in which the machine is pleced. The hroadcast seed eower heretofore nsed in this State throws the seed hy centrifngal force in a circle perpendicnlerly, so that a double qnantity of seed was eown in the rear of the propelling power. The Gem is said to sow all kinds of seede perfectly; and a very pecnlier feeture is, that it will sow blnestoned wheat.

Their Horse Fork is also worthy of mention here. It is made for enspending to the ceiling, is entirely of iron; end two forks, a horse, end a hoy, end a man on the stack, will take more straw to a thresher than twelve men. Where grein is threshed from stacks, e set of forks, it is said, will pay for themselves in two days.

All of the above are manufactnred by the "Sweepstake Plow Co." at San Leandro, where forty men ere employed constantly. The shop is 60x120 feet, with e foundry in the rear 20x60 feet. They run ten forges, blown by a blast driven hy e steem engine. All the work is done in the shop—cesting, forging, wood-work end peinting.

This factory is on the line of the Alameda and Western Pecific reilroads, end appeers to he very centrally located, and should be well petronized hy farmers who desire to keep their money here to bnild up onr own State, as long as the articles they make are as cheap and as well made as the imported.

Concerning the nnmerons imported articles exhibited hy this firm we shall speak in futnre, as many of them possess novel featnres of interest and importance to gen-general readers.

Forests, Grand and Primeval.

There are many respects in which California is not whet it wonld eppear to he at first sight, to e strenger. An overlander, or new arrival, encountere strange contrasts end wonderful enrprises; so varied ere the circnmstences of onr physical geography within narrow houndaries, that, compered with other conntriee, Californie is really entitled to the character of heing a land of wonders. We have no trees, no forests in eight in the valley to gladden and refresh ne; the atmosphere is too dry end the eoil too parched. Yet we heve in Californie the grandest forests in ell the world, the densest as well as those prodncing the most wonderful monuments of vegetable growth thet the traveler ever sees in any country. Since the Big Trees of Calaveras and the Meriposa Grove have hecome known and famous as amonget the world's wonders, we have maintained onr preëminence for the largest trees; but the impression has gone ahroad that there are only a e few scattering specimens of the great *sequoia*, end that the big trees do not grow here in extensive forests.

The redwood forests hetween Russien river end the Oregon bonndry, on the coast, are, for a hundred miles in Mendocino and Humholt counties, as dense end ee grand a forest as human littlenese ever fonnd itself in; and the trees are the seme primeval giants, in girth and etatnre, es the famone ones in Mariposa. Near Healdsbnrg, "Dntch John," the shingle maker, cut out of a eingle tree 180,000, to 200,000 ehingles, the former figure being common. One of these treee referred to in the Healdshurg *Flag*, meesnree 67 feet in circnmference, end 200 feet in heighth to the first limb, and will furnish, according to Mr. Bagley's calcnletion, 180,000 feet of lumher, meke split pickets to fence a ten acre lot, and fifty cords of wood besides. Another tree near Heeld's mill, called "The Stable," is hollow at the bottom, measures 27 feet across inside, and ie cepable of etabling twelve horses, with a hay mow to snpply them for a whole winter. The "Bean Pole," near hy, is not considered a large tree, bnt mcesures 344 feet in height.

Bnt on the north coast the *sequoia* has not exhausted itself in growing to an enormons size, so mnch as in endeavoring to show the world of science what the grand Primevel Forest was, end how the earth looked to its inhahitante in ages gone; to remind the Ceucasien lord of creation, as he comes to this jnmping-off place, that he has heen but a very small enimal, creeping among weeds and grass. On high promontories and mountaina overlooking the Pacific Ocean, the redwoods bask and flonrish in the afternoon sunshiue, alternated hy nightly Alaskan fogs.

That the range of the giant redwoode is not limited to a few groves, is further proved hy the discovery, just reported, of another body of treee es wonderful es those of Meriposa, near Kern Leke, in the extreme southern corner of Tulare Valley.

Hitchcock's Monthly.—The first number of e new illustrated magazine of this title, devoted to "choice music, art notes, and select reading for the family circle," is received from tho publisher, B. W. Hitchcock, 24 Beckman street, New York.

Rock Boring by Machinery Economically Successful.

So long es finely devieed machines, and paper celcnlatione of possibilities of horing hy steam, remeined the limit of the work of inventors in this direction—of making the miners, delving in pursuit of minerals more eesy—the mining world looked on impertnrhehly end donbtingly; end boring hy machinery met the general verdict of "not enccessful." For ordinery mining, or es a matter of real interest to money getters, machine horing has not heen thna far, therefore, a thing eetahlished. Eight or ten different kinds of horing machinee have heen et work; and verious reporte ee to their merits have heen puhlished from time to time. Yet the practical mining world is indifferent.

Ae something merking definite progress, we give the following in regard to Mr. Dœring's mechine, from the *Quarterly Journal of Science:*

"We find dnring a recent vieit to the Cornish minee, that the petentee is offering to contract for sinking shafts end driving levele upon such terms ee will, without douht, induce meny mine adventurers at once to close engagements with him."

"Dœring'e rock-horing engine hae been worked on the 185 fethom level in Tincroft mine, conjointly with enother, from the 6th of Jannary np to the preeent time, end hes driven sixteen fethoms in herd Tin Cepel, which Cept. Teagne coneidere wonld coet 20*l.* per fathom if driven by hand lehor. Dnring the greeter pert of this time, in consequence of the eir-pumps getting constantly out of repeir, the mechine was only worked hy one (shift) corpe of two men; end continnous working with three corps, comprising five men end one boy, only commenced on the 6th of July. Since thie date nearly ninc fethoms of grnnnd heve heen driven, et e cost of 17*l.* 16*s.* 2*d.* per fathom. The following is the cost of working the mechine during the last month:

	£.	s.	d.
Five miners and one boy	24	0	0
One boy to remove rubbish	2	0	0
Two enginemen at surface	6	0	0
One smith and boy	6	5	0
Oil, waste, and candles	3	9	0
Gun-cotton for blasting	4	10	0
Fuse	0	7	0
Sundries	0	3	0
Coals	6	0	0
Repairs	2	0	0
	£53	14	8

Amongst the rock-boring mechinee that we rememher are the Annnlar drill of Mr. Case, a New Hampshire inventor; the Lomeiller, used in the Mount Cenis tnnnel; tho Bergstrom, a Swedish miuing engineer (described in Berg & Hutt's *Zeitung* of last year); the Saxe, a mining engineer of Altenherg, near Aix; the Schwartzkopf, used in Silesia; the Schnmenn, Modelmeister, at the Freiherg Mining Academy (deecribed in Rzhihe's *Tunnelbankust);* the Hoosao Tunnel machine, (described hy Mr. Dewey in the M. & S. Press, of April 14th, 1868); Lowe'e machine (described in the *Stuttgart Polytechnic Journal);* the Hanpt machine, nemed efter the Philedelphie civil engineer; end the Phillips, e White Pine miner, (decerihed in the M. & S. Press of Merch 27th, 1869.) Gen. Haupt's machine is ahont to be introduced into the lead mines of Sweledale, in Yorkshire; and Mr. Lowe's machine is in uee in eeveral lerge reilwey cuttings and tunnele in England.

Some interesting facts tonching the practical velue of severel of the hest working machines nsed in the Harz end Belgium, will be given in another erticle.

Musical Instruments.—Mr. W. Willis, leader of the splendid hend which forme euch en ettractive feature of the Fair, is the eole egent for Schreiher's petent American cornets end hrees band instrnments. The instruments used et the Fair are of this meke, and their tone ie the best testimony of their qnality. They reqnire no hetter trumpeting.

The Goodyear Hard Rubber patentees are lawing in the San Francisco Courts, ageinst Winter, Hield and others, who have been infringing, as they claim, npon their patent.

The Overland Monthly.

The October number of this magazine has a most appetizing hill of fare. Half, at least, of the titlee displayed in the tabls of contents, are tempting. We have read "Knapsack and Blanket," aud "Tennessee's Partnsr." In the latter wo recognize the pen which has furnished those peculiar sketches of early California life which have always been to ns the chief charm of the *Overland*. Only a '49er could produce such pictures,—and mighty fsw of those. The writer is plainly not giving you hearsay. His painting is too vivid for that. One who transfers to the very page before you every tint of the landscape, and suggestively recalls to your ear every passing sound, has boen "there." And this writer has not only been thero, but when there he grasped every "situation," and with the instinct of genius entered fully into its spirit. Hs is true to this, whether describing the crowd of gambling roughs in an early canvas camp, or the quiet circle of now grizzled smokers who tell stories of former "strikes," and still dream of "home" as the place they left. His pathos and his humor ars eqnally genuine. He excels especially in showing you tho soft and kindly side of rude and strong,—even of criminal,—natures. And such were plenty here in '49. "Tennessee's Partner" is by no means the best of these sketches of his; but it is good enough to furnish us a text. The *Overland* is sure to bs read as long as there is a '49er in the land who has escaped whisky. For he will always hope to find one of these characteristic articles in it. Its enterprising proprietor, Mr. John H. Carmany, will take care that its high reputation shall in every respect be maintained.

Stationery.

This very important branch of our importing and manufacturing interest is overlooked by the mass of our community, although occnpying the attention of a large number of persons directly interested. Every one knows the importance of "pen, ink and paper," but few are aware of the extent of their importation and manufacture. Althongh a largo part of this class of goods is made in Europe, principally England, France and Germany. it is nearly all purchased in the Eastern cities from agents of the producers.

Gradually the sale of drawing paper has been added to the stationery businese, until at the prcsent time it demands a considerable portion of the attention of dealers. Balston & Co., of Maidstone, Kent, England, are the manufacturers of J. Whatman's drawing papers, which are nsed almost exclusively by our draughtsmen and architects.

Onc firm in this city,—Messrs. George B. Hitchcock & Co., corner Sansome and Commercial streets,—import a large portion of their etock direct from the manufacturers, and neing particular care in its eelection, have secured the largest retail trade in the oity.

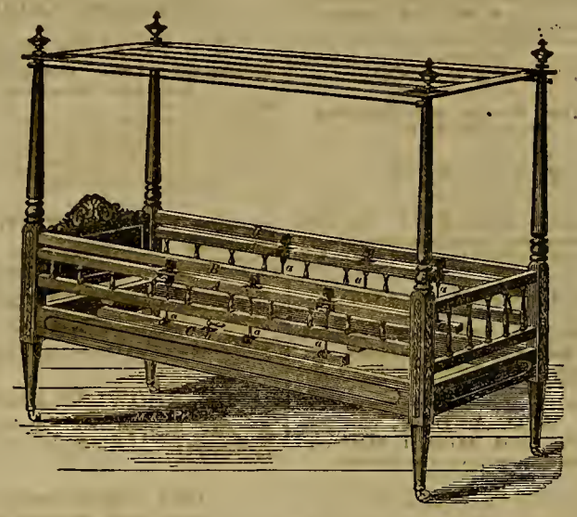
They are now manufacturing all the finer grades of blank books, letter presses, iukstands, wallets, portfolios, etc., and, judging from their immense sale, are giving more than ordinary satisfaction. A fine exhibition of their usual style of blank work, eto., may be seen south of the main aisle, above the fountain.

A New Invention.—A new school strap, for carrying books, hae been invented by a lady of this city, a model of which has been made by Main & Winchester. It is a very neat design, simple, but convenient. It is made to carry elate, pencil, pen and lead pencil, has a handle, and can be enlarged or ensmalled to suit the number of books to be carried. The object of the strap ie general utility and convenience for the school children. It will be eold by Warren Holt, at 411 Kearny etreet. The patent will soon be expected, and the price of the article put low, that every girl and boy can have one. It is hoped that the new invention will fill just the wants of the children, who complain hitterly of the awkward straps and inventions now used. There is much inveutive genius being displayed hy our California ladies just at present.

Confining Bed-Clothes—Improved Crib.

We give herewith an illustration of a method of so confining the bed-clothes upon a crib or bed that they cannot be rolled or kicked off by children or other persons sleeping under them. Ths invention is intended to apply more particularly to crihs or beds for children and invalids.

Referring to the engraving, the upper rail is called a lifting rail, and is attached by the small iron rods, *a*,*a*,*a*, to the short or clamping rail, C, the rods passing loosely throngh the two npper permanent rails of the crib. The bed-clothes to be held in place are drawn outwards between the short clamping and the lower main rail. This may be readily done by raising the upper or lifting rail, to which the clamping rail, C, is attached by the rods *a*, *a*, *a*. After ths



INWOOD'S PATENT FASTENING FOR SECURING BED-CLOTHES.

clothes are so arranged, the clamping rail is pushed downwards and seoured in plaes by the set screws near the top of the rod, in the rail, A. The rails upon the opposite side are adjnsted in the same manner. The inventor, Mr. George Inwood, of this city, exhibits three cribs and one large double bed, with thie arrangemsnt attached; by an examination of which, the advantages and mods of operation of the invention may be readily seen and understood. Newly-married people may learn an important and useful lesson by examining Mr. Inwood's exhibition, patented by the Mining and Scientific Prese Patent Agency.

The Risdon Iron and Locomotive Works.—Among the few branches of industry which cannot be very broadly represented at the Pavilion, we may mention that of ship-building and marine engine construction. In the latter branch, the Risdon Iron Works, though a very recent organization, has attained a most noticeable position. During the single mouth of Augnst, or very nearly within that time, thie single firm added to our steam marino not less than five steamers, aggregating 2,000-horse power, ae follows: New steamer launched from North'e ship-yard, about the 1st of September, tor the South San Francisco Ferry Company; the Neptune, the Vallejo, the Monterey, and the H. H. Buhne. The first mentioned has demonstrated hor ability to reach a epeed of 18 miles an hour; and the entire series affords a striking evidence of what our workshops can do when they are pressed. Nothing connected with the vessels mentioned was imported except a portion of the raw material. All the lumber, knees, etc., is of California growth; all the shafts are of our own forging, and the casting, both iron and brass, of our owu manufacture. A portion of the iron work was from Oregon iron. These facts speak volumes for the energy and enterprise of Califoruia, aud for the skill of her mechanics. We have in hand the facts in full connected with the construction, dimentions, etc., of these steamers, which will be given at an early day.

Cabinet of White Pine Ores—An Aged Worm.

The splendid collection of Messrs. Biggs & Gardner is now in place, aud arranged in proper order in the front gallery of the Mechanics' Institute Pavilion. It contains magnificent specimens from one hundred and seven mines of White Pine and the limestone region, consisting mainly of chlorido of silver, green and blue carbonates of copper, silver glancs, antimonial ruby silvsr, galena, stetsfeldtite, and variously colored carbonates of lead, with probably also some snlphate of lead. The gangue is to a considerahle extent silicious; and from near the famed region of chlorides there are likewise produced eome very massive pieces of iron ore—micaceous iron and hematite—presenting evidencss of having besn precipitated from ferruginous waters. The fossils most noteworthy iu the collection ars a lily encrinite beautifnlly preserved, and a little rolled up crustacean worm, half the size of one's little finger nail, which Mr. Biggs says he found alive, encased in solid rock. A specimen waa broken up, and this (according to the oeular testimony of hoth Messrs. Biggs and Gardner) fell out, sprang up a few inches, gave signs of life for half au hour, and was then gensrously treated to a whole bottle full of prospectors' whisky, in which he ended his long and lazy life of geological ages, since the silurian, or perhaps the carboniferous period! The stone and the silicious casing, out of which the specimen came, is preserved, so that it is yet possible to investigate whether it may not merely have got into a cavelet in the rock, or bored its way in, as we surmise. The curiosity will undoubtedly be examined, and reported upon by some one of our competent naturalists.

Bring Us a Road Steamer.—Mr. David Watt, of Grass Valley, is in Scotland, where he has been examining one of the rubber-tire road steamers that rune over common roads of "any grade," says the Grass Valley *Union*. Ho will probably bring one of these road steamers to California, and give the Tide Land Reclamation Company an opportunity to try its merits for drawing gang-plows.

Dull Times on the Columbia.—The O. S. N. Co. has discharged all their machinists and closed the shops, throwiug out of employment some eleven or twelve men, most of whom have families. The reason for this, as we understand, is on account of the slack in bnsiness, the company at the present time doing hardly sufficient to pay incidental expsnses.—*Dalles Mountaineer, Sept. 2d.*

Mastadon bones in large quantity are reported by James Halford in Grizzly gulch, near Helena, (Montana)—showing that the fresh water Pliocene beds of the Upper Missouri extended over that regiou.

New Publications.

The Fresh Water Tide Lands of California. San Francisco: M. D. Carr & Co. pp. 50.

This is a pamphlet issusd undsr the anspices of the Tide Land Rsclamation Company, whose operation on Twitchell Island, and other islands in the vicinity of Sherman Island, have been referred to at length by us. It contains an introductory statistical article and two engineers' reports—Gen. Alexander and Sherman Day—with a large nnmber of articles on the the same subject that appeared in the *Alta*, *Herald*, *Examiner*, *Call*, *Times*, Grass Valley *Union*, M. & S. Press, *Bulletin*, *Courrier de San Francisco*. The Reclamation Company has also published a map of the tule lands in the central part of the State, which will facilitate an nnderstanding of the operations of reclamation.

The Law of Storms—The Various Phenomena by which their approsch can be ascertained with certainty, and practical directions to mariners for the avoidance of their fury. Compiled from various sources by Captain John Ross. A. Roman & Co., San Francisco. 12mo.

We commend this little work of Captain Ross as practical, pithy and reliable in its data on which conclusions are based, and up to the times in the science of msteorology. It is in the main the working rules of a practical sailor, and is based on Dore's Law of Gyration. Fitz Roy, Piddington and other authors' ideas are used intelligently. A sea voyago can be rendered quite intsresting with a companion of this kind, though it is intended especially for the use of mates and master marinsrs. Printed by Spaulding & Barto, at the Mining and Scientific Press Job Office.

The Ruthven Hydraulic Propeller *versus* The Screw and Paddle. Published by the Hydraulic Propeller Company. 8vo., pp. 64. London. For sale by A. Roman & Co.

An attempt is here made to prove that the new method of propelling ships invented by Mr. Ruthven, is more economical and faster than with the screw propeller—the whole being based upon facts and figures developed from a number of competitive trials betwsen the British double-screw gunboats Vixen and Viper and the hydraulic propeller Waterwitch, in 1867. Instead of the paddle-wheel or screw propellers *outside*, the hydraulic has a water-wheel placed horizontally, inside the vessel, inclosed in a metal case, situated under, or about, the water line of ths vessel; and water is supplied to the wheel through a series of apertures in ths bottom, leading into the wheel-case. The water, by action of the wheel, is expelled through the conducting tubes into the sea again, from the nozzles on the outside of the ship. Inventors interosted in euch questions will find data incorporated on which conclusions may be safely based.

"Beton-Coignet," by Leonard F. Beckwith; and "Asphalt and Bitumen" and "Macadamized Streets," by Arthur Beckwith. Paris Exposition Reports. Government Printing Office, Washington. For sale by A. Roman & Co., San Francisco.

The importance of these enbjects and their interest to engineers is eelf-evident, when we reflect that almost every engineering work has something to do with these earth-compositions, for epecial purposes and usee to which certain kinds are better adapted than others. The national government is doing a good thing for the couutry in thus disseminating the latest and moet valuable information from the "Expositiou Universelle," with suitable working illustrations, and chiefly on practical subjects—worke that would scarcely warraut a publisher in this country to enter upon in a etyle that would do justice either to the matter, or be of substantial service to the interests concerned. All who work in concrete, mortars, bituminous and other compounds for walks, pipes, etc., will find it a cash loss, for example, to be without euch information as this, that is now available to the world. Many of our best engineers crossed the ocean and devoted themselves to a working up of their own specialties at Paris in 1867. We hope that much more of the same kiud of matter will be issued from the Government Printing Office.

Rhinoceros Teeth and other Fossils Under Table Mountain.

[Written for the Mining and Scientific Press.]

EDITORS PRESS:—Some time last summer, Mr. D. T. Hughes, of the Maine Boys' Tunnel, at Table Mountain, in Tuolumne County, dug a strange looking tooth and bone out of the auriferous gravel of his claim. They were perfectly preserved, and Mr. Hughes, appreciating the value of these relics to science, presented them to me for description. They were carefully packed and forwarded by Mr. George A. Treadwell, of Tuolumne County.

An examination of these fossils shows conclusively that the tooth belonged to a rhinoceros, the species described by Dr. Leidy, of Philadelphia, as *rhinoceros hesperius*, and that the bone belonged to a large animal allied to the elk; possibly the bone of a large species of elk. This bone was broken before being deposited in the gravel, and its surface shows, in the most unmistakable manner, that it had been gnawed by carnivorous animals, for the grooves made by their incisor and canine teeth are clearly visible.

This bone was taken out by Mr. Hughes, at a point in the tunnel 1,776 feet from the mouth, and over 300 feet below the surface, and about five feet above the bed-rock. The tooth came from about the same distance below the surface, and 1,840 feet from the entrance of the tunnel.

This discovery makes a valuable addition to our knowledge of the fauna of that ancient valley anterior to its filling up by detritus and lava.

Careful inquiries made at my request have failed to verify the reported occurrence of stone implements in the stone formation, so that we are still in doubt whether man existed in that region contemporaneously with the rhinoceros, the mastodon, the elk (?) and other animals.

As you may perhaps think the facts of this communication sufficiently interesting to insert in your columns, I would like to direct attention to the importance of carefully saving any and all fossil bones which are found by the miners, from time to time, in the progress of their underground explorations, and of sending them to the proper persons for identification and description. It is probable that very many relics important to geologic history in California are annually lost.

New Haven, Conn., Sept. 25, '69.

Yours, etc., WM. P. BLAKE.

[We have on several occasions noted the finding of stone relics in auriferous gravel under lava, with what seemed to us the most unequivocal testimony of their location in formations older than the "lava period;" but we shall be pleased to hear of further discoveries, and such, if possible, as will satisfy the most critical students of the geology of the "Stone Age." —ED.]

THE USE OF BAND SAWS.—The band saw, which may be seen at work every evening at the Pavilion, exhibits a principle which is deserving of more general introduction into our wood-working shops. There is a great saving of power connected with that mode of sawing, to say nothing of the superior and more speedy manner in which work can be done by such saws. Great difficulty was encountered in their early introduction, by reason of their frequent breaking, and the difficulty attendant upon replacing them. The improvements of late years introduced into the manufacture and tempering of steel, and in the process of welding, especially by the use of "silver solder," has now rendered their use quite practical. There is no reason why they should not come into more common and varied use. They might doubtlessly be advantageously employed in many cases where circular and jig saws are now used.

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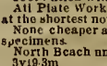
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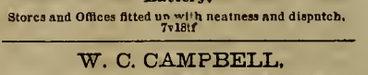
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For particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

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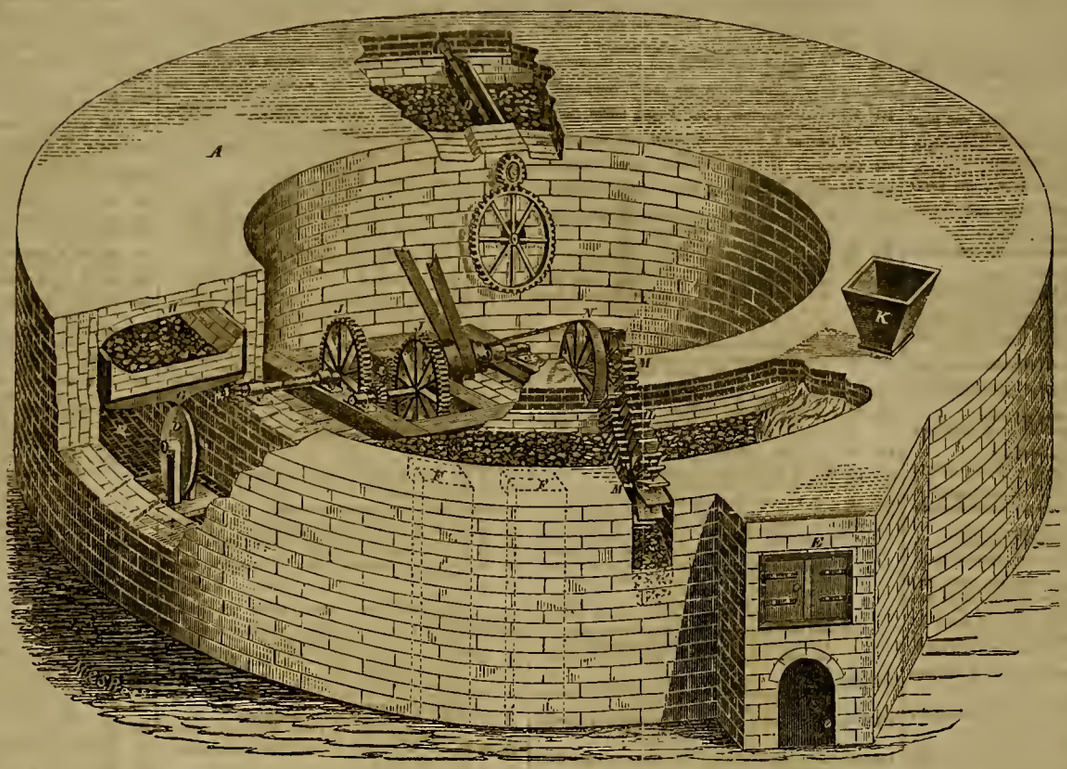
Fred. Ernst's Patent Rotary Roasting Furnace.



This is a mechanical furnace, which does away entirely with manual labor, excepting a fireman. It charges, roasts, stirs, and discharges the ore by a very simple mechanical contrivance,—in fact performs all the operation required in the oxidation or chlorination process of roasting gold or silver ores.

The ore is taken by means of an elevator from the battery, and is discharged constantly and regularly into the hopper, *K*, from whence it reaches the rotating hearth, *G*. This hearth consists of a cast iron orbicular ring paved or lined with bricks, and revolves on a series of iron rollers, *D*, and is kept continually in motion by means of the gearing, *J*. This gearing has two gear wheels, three feet in diameter, and pinions to regulate the speed from the cone pulley, increasing or diminishing it to conform to the required slow motion of the hearth, *G*. The hearth so charged and running constantly carries the ore into the first heat, which is next to the flues, and so passes all the different temperatures of the furnace, thus effecting a very uniform heating and chemical action on the ore; at the same time it has also to pass the stirrers, of which there are different kinds,—stationary and movable ones,—the number and speed of the latter varying according as the ore contains more or less sulphur. The movable paddle stirrers are shown at *O*. These movable stirrers are connected with the gearing under the iron bed of the hearth, *G*, as shown at different points, until it passes the fire-bridge, where it receives its ultimate and highest heat, and is then discharged by the discharging apparatus. This discharging apparatus consists of two chain or rag wheels, *M*, *M*. These two chain-wheels drive a double endless chain with inserted plates of iron (scrapers). The chain hanging loose underneath between the wheels draws these iron plates through the cavity of the hearth, and so discharges constantly the roasted ore. To keep the current of air constant throughout the whole length of the furnace, the arch over the hearth decreases slightly from the fire-bridge toward the flues. For concentrated sulphurets it may be advantageous to increase the circumference of the hearth. The advantages claimed as attainable from the use of this machine are—the doing away with a large portion of the costly hand labor ordinarily required, and the better and more thorough accomplishment of the same by machinery. A great saving of fuel, not only through the length of the hearth, but also for the reason that all the gases which are lost by other furnaces are economically employed in this as a substitute for other fuel.

The furnace is so constructed that the large access of air required for the oxidation of the ore, in addition to that demanded for the consumption of these gases, does not operate to materially lower the temperature in the furnace. When the ore in this furnace is once desulphurized, the gases cannot form any new combination with the ores or metals therein, for the reason that while the currents of air and gases are moving to the rear, the furnace hearth is constantly advancing in an opposite direction.

The construction of this furnace is of the simplest kind, and all the necessary castings can be easily transported even on mule-back. The loss of the silver by sublimation in present furnaces, it is claimed, is avoided in this, as the silver condenses before reaching the flues; the distance being great, and the heat diminishing gradually until the gases reach the point of final exit. Liberal terms are offered to parties who desire to use this furnace. Further information can be had by addressing the Inventor and Patentee,

F. ERNST, San Antonio, Lower California, Mexico,

Or by calling upon H. W. SCHMIDT, Druggist, Kearny street, corner of Sacramento, or at this office.

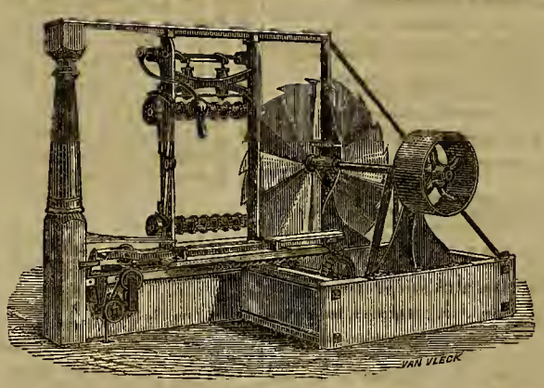
A Curious Optical Illusion.—Everybody knows Perkins, the great California seed man, and almost everybody has seen the photographs of his not very handsome, but kind looking face; and consequently, it is generally known that he has only one eye, but that is a keen one for business, or for a joke. One of the seed merchants on Front street was bantering Perkins about people getting on the blind side of him, and so forth, when the old fellow offered to bet $20 that he could see more with his one eye than the merchant could with two. The bet was promptly taken, and the stakes put up, when Perkins said that with his one eye he could see that the merchant had two eyes, while the merchant with his two eyes could only see that he (Perkins) had one. The laugh was loud and long, when the explanation was given, and Perkins declared the winner.

Another Galvanic Protection for Iron Vessels.—A method of protecting iron vessels against rust and corrosion has been proposed by MM. Dance and Bertin. They contemplate the conversion of the hull of the iron vessel into a galvanic battery, by placing, inside the hull, pipes and tanks made of zinc and filled with sea water, and connected by means of bolts and rivets in metallic contact with the outer side of the vessel. They also design to use strips of zinc on the iron plates of the vessel immersed in the water.

Extraordinay Occurrence.—On the 20th instant, while a number of ladies were laughing and talking together at Vallejo, one of them talked so much that she dislocated her jaw! Heavens and earth! what a strain there must have been to effect such a displacement! Jones says he knows quite a small, weak woman who can talk three hundred and ninety-seven words a minute for eighteen hours without disarrangement of her talking gear; and will not believe that a woman's jaw can be stopped except by force.

Put an Englishman into the garden of Eden, and he would find fault with the whole blasted consarn; put a Yankee in, and he would see where he could alter it to advantage; put an Irishman in, and he would want tew boss the thing; put a Dutchman in, and he would proceed at once to plant it.—*Josh Billings.*

HUNTINGTON'S IMPROVED SHINGLE MACHINES.



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Steam Engines, Saw Mills, Lath and Picket Machinery, and Flax-Breaks,

MADE TO ORDER.

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GOLD METAL, OR COLLINS' METAL WATCHES.

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We have made great improvements in our Watches lately, and will hereafter send only our BEST QUALITY, WITH BILL OF COLLECTION IN GREENBACKS.

BEAUTIFUL WATCHES for Ladies..... ..$15 and 20
" " for Gentlemen..... 15 and 20
LEONTAIN CHAINS for Ladies' Watches.....$6
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GENTS' VEST CHAINS..... $3 to $6

The firm of C. E. COLLINS & CO., so long and favorably known in San Francisco, will be closed after September 15, 1869, and will continue in our

NEW COLLINS WATCH FACTORY,

No. 335 BROADWAY,

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We deal largely in WATCHMAKERS' TOOLS AND MATERIALS, as usual.

Avoid persons who propose to sell the GOLD METAL or COLLINS' METAL WATCHES, as the GENUINE can only be got of us, and no one is authorized to use our name in any way.

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13v19-3m No. 335 Broadway, Corner of Worth Street, New York City.

REMOVED.

The undersigned have removed their WOOD AND WILLOW WARE STORE from their old location on Clay street to the new and commodious stores Nos. 118, 120 and 122 FRONT STREET, one door from southeast corner of California street.

July 11, 1869. ELAM & HOWES.

4v19-3m

For Miners, Millmen and Metallurgists.

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CONCENTRATION

Of all kinds of Ores, and the

CHLORINATION PROCESS,

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16v1tf SAN FRANCISCO.

Office of California Powder Works,

San Francisco, July 15, 1869.

NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

JOHN P LOHSE, Secretary.

5v19-3m 314 California street

Mining Secretary.

THE SUBSCRIBER, HAVING SERVED FOR THE LAST five years as Secretary of various mining companies, feels fully competent to serve in that capacity. Any parties wishing to secure the services of a Secretary can be accommodated on reasonable terms. Information given, and all necessary papers correctly made out.

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Room 37 New Merchants' Exchange, California street, San Francisco 17v15-tf

OFFICIAL CLASSIFIED CATALOGUE.

Articles on Exhibition at the Seventh Industrial Exhibition of the Mechanics' Institute of the City of San Francisco, 1869.

CLASS XII.

The Art of Printing and Printing Presses Lithography, Engraving, Bookbluding, Paper, Type, Etc.

Entry No.	of Article.
7	7 Henry White, San Mateo, scrap book and journal of travels in Asia, Africa and America.
19	29 Saratoga Paper Mill, Pfister & Co., Santa Clara, samples of straw and Manila paper.
42	53 Pioneer Paper Mills, S. P. Taylor & Co., packages of Manila and blue paper, and pseper hags.
62	76 F. M. Truworthy, stencil plates and impressions.
66	80 George B. Hitchcock, case of blank books,
66	81 George B. Hitchcock, letter presses and stands for do.
93	113 A. Hourcads, cane made from paper.
94	114 E. F. Hartshorns, Washington printing press.
146	177 Taylor & Co., specimens of printing.
166	197 Bancroft & Co., law and miscellaneous publications, diaries, blsnk books, writing paper, envelopes, legal blanks, gold pens, and box for legal blsnks.
170	201 Tyler Bros., semples of copper-plate engraving and printing.
200	227 A. L. Stemson, one of Auer's patent check cutters.
203	231 Cubery & Co., specimens of printing.
262	297 Brown & McDowell, specimens of show-card printing.
342	395 Mrs. James Sullivan, box of stamps.
392	458 Paul Linforth, Californis-made printers' typs cases, and printers' furniture.
392	459 Paul Linforth, Russell's combination case.
407	474 A. A. Rosenberg, specimens of Csllfornia musical publications.
460	536 Burgess & Stratton, 3 pstent mnsic folios.
460	537 Burgess & Stratton, 4 patent paper files.
476	563 D. Hicks & Co., case of specimens of hookbinding.
476	682 Dewey & Co., Mining and Scientific Press, Mechanics' Fair Daily Press, Patent Agency and Publishing Establishment, samples of printing, specimens of designing and wood engraving, antique newspspers, etc.
476	583 Dewey & Co., cylinder printing press and printing apparatus.
488	601 L. A. Gould, Santa Clara, map of L. A. Gonld's farm.
534	659 P. G. Beam, railroad bulletin board.
544	669 J. G. Crocker, 2 railroad bulletin boards and 2 railroad views and advertisements.
587	711 W. B. Swan, railroad bulletin board.
602	727 W. S. Jacks, Napa City, steamer sheet of the Alta California for Feb. 1, 1851, printed on silk.
604	729 D. Boyle, Novelty job printing prese.
556	748 Gilmore & Van Norden, 2 large advertising framee.
639	777 Wsrron C. Butler, frames, specimens of wood engraving.
23	796 A. W. Stott, case of engraved cards.

CLASS XIII.

Land Conveyances and Materials, and Tools Used in Manufacturing.

Entry No.	of Article.
140	174 T. R. Smith, pair of iron wagon wbeels.
158	189 S. L. Pereire, Belleville buffer and bearing railroad spring.
185	217 Paul Frievhofer, brewery wagon.
189	219 W. H. Hughes, one tire upsetter.
250	281 B. Reiley, 2 pair of adjustable tongs.
369	303 Casebolt & Kerr, one coupe.
270	304 T. G. Walters, model for coupliug vehicle shafts.
317	360 Larkins & Co., end-spring buggy and side-spring buggy.
328	380 Kimball Manufacturing Co., rockaway.
347	401 Peter Portois, patent improved rail.
350	404 Geo. R. Cranz, model of dumping wagon.
370	429 Wm. M. Betts, lot of expresse and carriage springs, and testing machine.
371	430 A. W. Burnham, 2 buggy woods.
390	455 O. F. Willey, imported turn-down phaton, manufactured by W. D. Rogers, Philadelphia.
390	456 O. F. Willey, light buggy, by Brewster & Co., Broome street and Fifth avenue, New York; weight, 125 pounds.
399	465 Lawtou & Co., milk wegon.
403	469 Black & Miller, 1 hack and 2 top huggies.
435	524 Pickering & Davis, New York, velocipede.
597	720 Pool & Carlton, double extension tire-tightening wheel.
664	837 John Craig, model of patent dump wagon.
667	842 Belduke & Sicotte, California Spring Works, lot of carriage springs.

CLASS XIV.

Leather and Its Manufactures, India Rubber Goods.

Entry No.	of Article.
74	90 Main & Winchester, semples of harness, saddles, bridles, bits, whips, etc.
160	101 L. Price, 2 cases of California manufactured toots and shoes.
176	207 B. Falck, frames, mantelpiece pockets, watch pockets, card receivers, baskets, etc., made from leather.
212	240 — Barr, Sacramento, 6 California-made saddle trees.
216	245 Stone & Heyden, harness, saddles, collars, whips and whip lashes, saddlery, hardware, and other saddlery wares.
217	246 Malone & McMahon, sample of kip and calf-rkin leather.
237	267 Mrs. Whiting, portable wheel cap.
244	275 H. Behrendt & Co., California menufactured irnnks and valises.
277	316 George F. McDaniel, Marysville, 2 saddles and 4 saddle trees.
343	396 Lawless Bros., lady's saddle of California lesther.
364	421 James Scrimgeour, patent soles.
461	619 Freuch & Co., 2 Saratoga, 1 sole leather and 3 Mouiter trunks, and 3 sole leather valises.
462	540 Baker & Hamilton, roll of 24-inch lesther belting.
500	615 Broderick & Kast, case of ladies' California manufactured shoes.
604	620 Manesse & Baker, Bay View Tannery, calf, kip, glove, kid, California petent leather, pebble goat skins, imitation hog skins and calf kid.
551	681 J. C. Gage, patent adjustable breast coller.
647	815 F. T. Houghton, Masou's patent whip hanger.
463	549 Mrs. A. D. Baker, square leather frame, with worsted center piece, 2 oval leather frames, pair of leather bracelets, and 1 leather frame.

CLASS XV.

Furniture, Billiard Tables, Show Cases, Upholstery, Picture and Mirror Frames.

Entry No.	of Article.
33	45 McDonald & Withers, adjustablo window awning.
94	116 E. F. Hartshorne, patent shede roller.
100	122 Warren Holt, samples of school furniture, desks, chairs, settees, blackboards, etc.
100	124 Warren Holt, dumh-bells, rings and clnbs for calisthenics exercises.
105	134 F. G. Piccsroli, carved picture frams.
125	157 J. Gerhard, inlaid writing desk, the top containing 680 pieces.
126	158 Mrs. M. Carpenter, Indian child's cradle, made by an Indian woman 120 years old.
134	167 Dana & Coddington, Eureka and curled hair, in bales and bundles.
149	181 C. D. Hinckley, wire spiral springs.
164	195 Crandall Pstent Spring Bed Co., Sacramento, spring bed.
167	198 Henry Coms, ladies' tea caddy, composed of 3,805 pieces of wood and ivory.
171	202 Charles Gardner, 2 lady's work tsbles, California manufacture.
178	209 Derome & Strout, book-csss and wash-stand, with patent enclosed bed.
214	242 Strahle & Hughes, billlard tsble, California manufacture.
214	243 Strahle & Hugbes, laurel palace, California mannfactnre.
224	262 Blyth & Wetherbee, spccimens of pstent pyrographic wood center tables.
247	278 G. W. Pilbeam, inlaid center table.
264	299 Charles H. Jenkins, mortised picture frames.
265	300 N. P. Cole & Co., parlor and library sets, laurel and walnut bedroom sets, center tables, bouquet stands, cabinets, reception, Sultana, Poncean, ne plus ultra and Elizabethean chairs, armoire a glace.
358	413 C. Romer, old rosewood chamber set, renewed by polish and varnish; sample of polishing.
386	446 Hibbard, Sanborn & Co., samples of ornamental combination wood posts, railings, balusters, etc.
388	452 Kohler, Chass & Co., 3 piano stools.
394	461 J. F. White, 2 bed springs.
417	484 L. L. Sawyer, inproved patent window shsde (J. I. Tays').
423	490 A. Litzins, California easy chair, in blue silk rcps.
424	491 Mrs. H. E. Morton, reception chair.
426	492 Elias Miller, inlaid wood box.
442	510 A. J. Forbes, pet of the boudoir.
468	655 George W. Clark, sample of paper hangings.
476	564 Geo. O. Whitney & Co., elsgant walnut buffet side-board, antique claw-foot walnut parlor set, upholstered in gold and silver brocsde, folding chair in gold and silver brocade, walnut fire screen in gold and silver, rosewood chsmber set complete, chsirs covered with green silk brocade, walnut parlor writing desk, Turkish lounge covered with crimson and buff leather, pair of curtains in green silk plnsh, heavy cornices, fine inlaid card or center table highly polished, card receiver in walnut.
477	565 Thornton Westley, Westley'e improved bed sofa, improved bed bottom, California invention; Howe's patent bed bottom.
478	666 Pacific Elastic Sponge Co., samples of sponge, mettresses, pillows, church and chair cushions.
478	567 Pacific Elastic Sponge Co., Blake's patent chair springs.
479	568 Goodwin & Co., gilt parlor set, consisting of sofa and 6 reception chairs; fancy Turkish chsir, gilt parlor table, leather reclining chsir, library suit in leather, consisting of sofa, 2 arm chairs and 4 smeller do.; leurel chamber set, consisting of bedstead, bureau and glass, wash-stand and 1 commods—the nbove are California manufacture; rosewood chamber set, consisting of bedstead, burean and glass, washstand and commode; rosewood etagere; 2 inlaid houfies, and 2 gilt bouquet stande.
478	578 H. T. Graves, patent spring-seat chairs.
484	593 H. Wendel, specimen of lacs curtains, done up on elestic frames.
484	594 H. Wendel, specimen of drapery chenille fringe.
503	619 L. Castagnino, 2 specimen tables.
519	634 George W. Clark, samples of paper hangings and decorations, window ehades, etc.
626	648 Jacob Schreiber, 2 sets of iron garden furniture.
641	666 A. Spaulding, patent window screen, sample of pressed wood.
633	763 G. W. Smith, clock-spring shade fixture.
31	798 Joncs & Wooll, gilt mantle mirror frame.

Class XVI will be published in our next issue.

CLASS XVII.

Musical Instruments.

Entry No.	of Article.
21	31 F. B. Schoenstein, orchestrion machins.
205	238 Jacob Zech, 5 pianos, 1 set of piano keys, and 3 desks, California manufacture.
388	447 Kohler, Chase & Co., Chickering plsno.
388	448 Kohler, Chase & Co., 4 Mason & Hemlin organs.
388	449 Kohler, Chase & Co., Marshall & Mittauer piauo.
388	450 Kohler, Chase & Co., cass of musical instruments.
388	451 Kohler, Chass & Co., bass viole, banjos and drume.
407	472 A. A. Rosenberg, upright pianos, cshinet organ, harp, and case of instruments.
479	588 M. Willis, case of American cornet and band instruments, Lonis Schreiber's patent, with water valve.

CLASS XVIII.

Fibrous and Textile Substances as Wool, Cotton Silk, Furs, Etc., Raw and Manufactured.

SECTION 1.

Wool and Woolen Manufactures.

Entry No.	of Article.
10	16 G. G. Macy, one dozen hand-made house mats.
74	91 Main & Winchester, robes and blankets.
76	95 A. Hahne & Co., (Pioneer Factory) samples of wadding, batting and comforters, California manufacture.
89	108 W. D. Perrin, Sacramento, sample of flax.
116	148 Mrs. Anna Krause, Berlin wool robe.
136	170 Alexander Mackay, 8 pieces of list and rag carpet.
242	272 Capitol Woolen Mill, Sacramento, blankets, cassimeres and flannels.
243	273 B Boezl, specimens of the ramie plant.
243	274 B Boczl, cloth made from ramie plant, in use 2 years.
301	347 Captain Blethen, specimen of the Petor plent and fiber.
388	453 Kohler, Chase & Co., 4 piano covers.
389	454 J. Hutchinson, specimens of ramie plant and fiber.
426	493 Eureka Wadding, Batting and Comforter Manufactory, samples of waddling, batting aud comforters.
458	532 Mrs. M. Petersen, barouche robe.
528	650 Brown Bros. & Co., samples of cassimeres from Oregon City Woolen Mills.
680	833 Robert Perry, samples of California flax raised at Tomales, Marin County.
682	855 Henry Brook, 6 colored sheepskins, California manufacture.

SECTION 2.

Silk and its Manufactures.

Comprising: Silk Culture, Cocoons, Raw and Manufactured Silk, Furs, Clothing, Hats, Caps, etc.

Entry No.	of Article.
35	47 H. G. Ballou, lot of cocoons and silk worm eggs.
61	72 Edward Muller, Neveda City, sample of 50,000 cocoons of the Freuch Annual and Japuuese Green and Hybrids.
60	73 Edward Muller, skeins of silk, "own manufacture," of the above variety.
60	74 Edward Muller, sample of silkworm eggs and miders.
97	118 David F. Hall, San Gabriel, Los Angeles County, cocoons.
97	119 David F. Hall, San Gabriel, Los Angeles County, bouquet, made entirely from perforated cocoons.
101	126 F. S. George, Sacramento, sample of 100,000 cocoons.
206	234 Blake & Co., case of military goods.
231	260 Mrs. Corbusier, Sacramento, sample of 100,000 cocoons, product of 1869.
254	286 R. Mussedorfer, case of hats.
259	291 Thomas A. Garey, Los Angeles, case of a variety of cocoons and silkworm eggs.
259	292 Thomas A Garey, Los Angeles, raw silk in skeins and floss silk.
260	293 I. N. Hoag, Sacramento, ssmples of cocoons and silkworm eggs.
261	295 T. B. Flint, Sacrsmento, cocoons and silkworm eggs.
262	296 A. Packard, Santa Barbara, samples of cocoons.
263	298 J. H. Warwick, native silk, manufactured at Hudson City, New Jersey.
278	317 R. M. Adams, 2cases of hats and caps.
293	339 F. J. Sauffrignon, San Jcse, sample of 50,000 Frencb and Japanese cocoons.
395	462 Joseph Bros., lot of boys' clothing.
428	495 S. Figel, sample of boys' clothing.
472	658 Norcross & Co., 2 cases of military goods, regalia and embroidery, case of silk chenille fringes, cord, etc., and case of silks for manufacturing.
474	662 S. Rosenblatt, shawls, cloaks and walking snits.
475	680 Pacific Straw Works, 2 cases of straw, Neapolitan and fine goods, Milan lace, and beckram hat and bonnet frame, California manufacture.
496	611 H. S. Cabery, a'ent, Chicago, 3 pieces of Masonic jewels and regalia.
505	621 James Figel, samples of men's and boys' clothing.
611	737 Mrs. C. B. Cameron and A. A. Goddard, samples of green Japanese silk cocoons.
613	731 A. F. Goddard, samples of Japanese cocoons.
634	762 A. P Smith, Bro. & Glover, case of cocoons.
659	831 California Silk Culture Co., samples of two millions five hundred thousand Japanese cocoons, raised by the California Silk Culture Co.
659	231 California Silk Culture Co., case of imported cocoons.

CLASS XIX.

Sewing Machines and Needle Work.

Entry No.	of Article.
11	17 Mrs. J. A. B. King, picture and worsted.
12	18 Mrs. W. S. Chandler, "American Coat of Arms," in needle work.
22	32 Mrs. Sebrlnor, crochet bed spread.
24	34 Mrs. Robert Chandler, sofa cushion embroidered.
32	44 Mrs. E. Hopkins, sample of Knitting.
38	50 Mrs. Julius A. Oulbert, 2 fancy pin cushions.
54	64 Sarab E. Hoadley, bed-spread
65	65 Miss A. H. Kuggles, 2 cases of neck ties, bows, knots, etc.
68	70 Mrs Roscna Bessey, case of needle work and infants' clothing.
63	77 Ladies' Depositary, 2 cases of ladies' and infants' clothing.
64	78 Antoine Pronsergue, 3 cases of ladies' and children's underwear and waists.
67	82 Mrs. A. S. Magendie, embroidered sofa pillow.
79	96 Mrs. S. E Hollister, knit bed-spread.
81	98 Miss Mary Ann Murphy, picture in worsted, "The Immaculate Conception."
81	99 Miss Mary Ann Murphy, picture in worsted, "The Bird of Paradise."
86	105 Mrs. J. G. Klumpke, embroidered rug.
96	117 Mrs John Wilde, St. Pauls, Minnesota, beaded pincushion.
99	121 Mrs. W. H. Parker, crspe and chenille embroidered sofa pillow.
102	127 Mrs. Regensberger, specimens of embroidery.
103	128 Mrs. C. F. Wolcott, a rustic sceno in worsted.
107	137 K. Eatz, sample of perforated stamping.
107	138 F. Eatz, piece of embroidery.
112	144 P. H. Velbert, specimen of tapestry.
114	145 Eliza Pryte, sample of embroidery.
114	146 Eliza Pryte, wreath of flowers in worsted.
117	149 Miss Anna Jordan, samples of crochet and worsted work.
118	150 Mrs. Lawrence Reilly, bed quilt.
122	154 Miss Lizzie Martin, bed quilt, "Joseph's Coat of Many Colors."
128	161 Mrs. Mary Ann Ayers, crochet basket and tidy.
129	162 Mrs. H. Robson, bed-spread.
131	163 Miss Viole Lillentcld, infant robe trimmed with tatting.
139	172 Mrs. A. B. Medens, worsted wreath.
151	182 Mrs. Fanny P. Chaudler, knit bed-spread.
172	203 Mrs. C. Latham, chenille shawl.
193	232 L. H. Bailey, picture in worsted.
204	222 Miss Henrietta Strauss, crochet bed cover.
232	261 Mrs. C. Van Dusen, 3 down capes and trimmings.
236	266 Mrs. Kirk, 2 old-style bonnets.
252	284 Mrs. M. A. Ransome, samples of knitting and needle work.
274	313 Mrs. H. Forman, infants' knit clothing.
281	329 Mrs. H. T. Thoburn, samples of embroidery.
282	213 Mrs. Mary E. McClellan, latted tidy.
285	328 Mrs. Hanneberg, case of infants' wearing apparel.
297	343 Mrs. Alexander, specimens of acedic work.
342	394 Mrs. Peters & Co., case of goods stamped for embroidery, and case of embroidered goods.
401	468 Miss Annie Weston, bed spread.
409	476 Mrs. C. E. Caswell, show case of millinery.
412	479 Bartram & Fanton, G. H. Arnold, agent, sewing machine and sample of work.
415	482 Miss Mary Odermatt, picture in worsted,
420	487 Miss Eva Frankenbach, crochet tidy.
432	499 Women's Co-operative Union, 8 cases of ladies', gents' and children's furnishing goods and fancy articles.
444	612 Mrs. J. A. Mayhew, case of millinery and dressmaking goods.
447	515 Madame Goldberg, case of millinery goods
461	538 Mrs. W. Scott, embroidery in chenille and velvet.
506	622 Howe Machine Co., 6 table sewing machines 3 cabinet sewing machiucs, and 2 cases of samples of machine work.
507	621 Pacific Sewing Machine Co., 3 table shuttle machines, 3 table single thread macuines, and one hand machine.
515	630 Orover & Baker, 6 family elastic stitch sewing machines, 2 shuttle stitch machines, 2 cabinet elastic stitch machines, and 2 cases of specimen stitching.
552	676 Mrs. E. H. Watson, aged 81 years, netted tidy and laces, knitted stockings and socks.
573	695 Mrs. J. D. Daggett, samples of infants' socks.
575	697 Mrs. L. F. George, bedspread, made by an Insane woman.
576	698 Mrs. M. Phelps, knit bedspread.
583	713 F Hansen, silk picture.
601	724 Mrs. A. L. Jones, Sacramento, perfect-fitting 12 formed model for fitting dresses.
605	730 Mrs. Benj. Haynes, afghan, with poll parrot in center.
608	733 Mrs. H. H. Clark, bed quilt.
608	734 Mrs. H. H. Clark, bed-spread.
554	744 A. H. Suplee, 9 Elliptic sewing machines.
554	745 A. H. Suplee, American button-hole machine.
555	746 Singer Manufacturing Co., Robert H. Yates, agent, 7 Singer's sewing machines.
555	747 Singer Manufacturing Co., sample book, and 2 show cases cases containing specimens of work.
622	754 Miss M. E. Scott, 2 pieces of tapestry work.
637	765 Mrs. Owen Conty, patch work bed quilt.
642	781 Mrs. John Smith, pair of knit mittens.
40	805 Mariah Sutherland, 1 tapestry picture (Crowning of Queen Esier).
57	812 Capt. Barron, 1 tapestry picture (Geo. Washington.)
666	841 Mrs. T. Weller, trimmed Ladies' and children's dress patterns
669	843 Mrs. Rasbrouck, patch-work bed quilt.
309	356 H. Frieolander & Co., 1 case of underwear.

CLASS XX.

Horticulture, Agriculture, Substances Used for Food, Etc., Vinous Products.

SECTION 1.

Comprising Flowers, Plants, Agricultural Products, Fruits and Vegetables, Tobacco Raw and Manufactured, etc.

Entry No.	of Article.
48	68 H. A. Burnett, Sacramento, sample of mulberry trees.
49	69 John H. Ferris, Sacramento, sample of mulberry trees.
50	60 Lyttleton Waldrum, Sacramento, sample of mulberry trees.
82	100 O. W. Reed, sample of 30,000 mulberry trees.
83	101 W. M. Hayne, Sacramento, 2 mulberry trees 2 years old.
83	102 W. M. Hayne, Sacramento, bale of hops.
84	103 T. G. H. Joncs, Sutter county, sample of 5,000 mulberry trees.
89	109 W. D. Perrin, Sacramento, bale of hops.
101	125 F. S. George, Sacramento, sample of mulberry trees.
155	186 Edward Mullsr, Nevada City, sample of 6,000 mulberry trees, morus alba variety.
165	190 R. J. Merkley, bale and bunch of hops.
201	228 M. Hosenberg, Sacramento, 2 Mediterranean squash.
201	229 M. Hosenberg, Sacramento, box of Californie almouds.
246	276 E. A. Upton, natural flowers in pots and cut dahlias in glass.
260	294 I. N. Hoag, Sacramento, sample of mulberry trees 2 years old.
291	336 A. P. Smith, San Diego, sample of mulberry trees 2 years old.
292	337 Servais Touner, San Diego, sample of mulberry trees 2 years old.
293	338 F. J. Sauffrignor, San Jose, sample of 6,000 mulberry trees 2 years old.
294	340 Mrs. L. Prevost, San Jose, sample of 6,000 mulberry trees 2 years old.
295	341 H. S. Lubbock, San Joss, ssmple of 6,000 mulberry trees.
296	342 L. Gambert, San Jose, sample of 5,000 mull erry trees.
316	366 B. F. Headen, samples of fruit.
316	368 L. A. Gould, lot of fruits.
340	392 H. F. Hutchinson, 8 boxes of assorted dried fruits.
357	412 Wan Yuns & Lee Yuck, samples of Chinese goods.
362	417 Robert G. Clark, Sacramento, samples of mulberry trees from plantation of 5,000.
363	418 James B. Welty, Yolo county, samples of mulberry trees.
366	423 Robert Williamson, Sacramento, samples of squashes, potatoes, apples, quinces sud pears.
368	426 Boggs Bros., Sherman Island, samples of citrons, watermslons and potatoes.
413	480 Mrs. Haas, San Leandro, Alameda, bale of hops.
414	481 S. Hall, San Leandro, Alameda county, squash.
435	502 J. W. Gals & Co., commission merchants, California peanuts from S. Hawk, Sacramento; fruit, nnarrowfat squash and corn on the stalk, from Jared Runyon, Sacramento river; fruit, orange, lemon and lime trees, and Norfolk Island pine, from M. Ryan, Sonoma; fruit from Oak Knoll, Napa; fruit from Dr. J. Strentzel, Martinez.
453	621 Geo. West, Stockton, 2 boxes of foreign grapes.
479	669 David De Bernard, samples of watermelons.
481	690 Mrs. Hildenhagen & Co., St. Petersburg, Russia, case of Russisn cigarritos.
467	598 B. F. Headen, Santa Clara, samples of spples, pears, quinces and foreign grapes, Osage oranges, almonds eud black walnuts.
489	602 D. F. Adame, San Jose, specimens of pears and apples.
490	603 G. W. Tarlton, San Joss, pears, apples, quinces and 4 mammoth squashes.
491	604 J. W. Patterson, San Jose, applee, pears, plume, quinces, and 4 small cascs of dried fruits.
492	605 J. E. Brown, variety of foreign grapes.
493	606 J. S. Greenall, Sacramento, speciman of spples.
494	607 E. Andrews, Sonoma, specimen of pears.
495	608 Dr. J. Strentzel, Martinez, California Osage oranges, pomegranetes, lemons, English walnuts, almonds, figs, and a general variety of foreign grapes.
497	612 J. R. Nickerson, Lincoln, Placer county, general variety of apples, pears, and foreign grapes.
499	614 W. Flint, sample of hops.
568	678 Theodore Bagge, Oakland, specimens of Australian glory pea.
564	684 Thos. Appleby, dahlias, Japencse lilice, gladiolus, hollyhocks and bouquets.
689	714 R. S. Thompson, Napa, 14 varieties of foreign grapee.
602	726 W. S. Jacks, Napa City, specimen of Italian chestnut on the limb.
618	750 Obed Worth, samples of fruit, apples, pears, quinces, Osage oranges, etc.
630	760 J. O. Brown, 2 sweet potatoes weighing 6 lbe. each, and 1 Irish potato weighing 3 lbs.
636	766 Mrs. T. H. Hittell, 1 amaryllis.
640	778 R. G. Perkins, 3 specimens of Japanese tea plant.
640	779 R. G. Perkins, 3 specimens of the ramie plant.
649	817 D. L. Perkins, Sherman Island, 146 varieties of vegetable seeds in bottles.
649	818 D. L. Perkins, Sherman Island, collection of sweet, pop, yellow and white dent corn.
649	819 D. L. Perkins, Sherman Island, sample of yellow Danvers mammoth onions.
488	600 L. A. Gould, Santa Clara, apples, pears, quinces, foreign grapes, and samples of dried fruits.
691	863 E. H. Nordgren, Saratoga, Santa Clara county, samples of apples.

NOTE.—Any error or omission occurring in this list will be remedied on application to the Entry Clerk in the Pavilion.

New Incorporations.

DUTCH FLAT GRAVEL AND CEMENT CO. Capital stock, $400,000; divided into 4,000 shares of $100 each. Trustees: William Watt, S. D. Bosworth, B. F. Morrow, Jas. S. Kennedy and Geo. W. Beaver.

SAUCALITO LAND AND FERRY CO.—Object: Dealing in real estate, for improving the same by erecting warehonses, wharves, etc.; by erecting dry docks, and by establishing one or more ferries, and for the purpose of obtaining franchises for the same. Capital stock, $3,000,000; divided into 6,000 shares of $500 each. Trnstees: Maurice Dore, Jos. P. Thompson, Leonce Girard, John L. Romer, Chas. H. Harrison, J. E. de la Montagie and H. B. Platt.

SUISUN, BERRYESSA AND CLEAR LAKE RAILROAD CO.—Length of road, 41 miles. Capital stock, $1,200,000. Directors: Edwin A. Rowe, M. A. Carter, J. H. Marston, B. W. Mudge, J. G. Carey, R. C. Tate and H. B. Murray.

MEETINGS.—GEN. HOWARD MINING CO. Trustees: A. B. Perkins (President), H. L. Davis (Treasurer), C. J. Ladd, James W. Simpson, F. B. Tarbett, Jacob Widber and B. O. Hodge. Ira G. Hoitt was re-appointed Secretary.

SEGREGATED BELCHER MINING CO.—Trustees: A. K. P. Harmon (President), A. Hayward, J. P. Jones, J. A. Pritchard and John Gillig.

THE Avitor, it is said, has gone up. This is a mistake. Neither it nor its projectors have gone up. They don't "give up the ship" yet.

What Makes Our Doorkeeper so Very Healthy.

[From the Daily Fair Press, October 4.]

Our doorkeeper at the Fair is a remarkable man. Every one remarks him. He is a personable men, and a jolly; and his countenance is as the rising moon in harvest time—eginificant of a full crop.

He laughs nervously withal, at times, and emiles frequently a jovial smile, for his mind ie at rest, and qualms of conscience are lo him unknown.

Seeing him ever smiling and benigu, the frequenters of the Fair have begun to reason with one another, concerning our doorkeeper. "How is it?" they eaid, "that a man who keeps the door,—naturally allied to turnpike-keepers, who are all misanthropic,—"how is it that such a man is jolly and pleasant as a champagne punch?" and they went about to discover the secret, and could not find it.

But the secret camo out; and it was a woman that discovered it. What cannot a woman do! Her emilee have made many a hero front every form of death; her witchery laughs at the wisdom of philosophers, and makes Michael Reese invest in gingerbread. It was a woman that sat in the gallery of the Pavilion, and let her rovingeyes wander at will among the gay throngs. She saw young girls, with long hair, young dandies with short wits, lovely women with bonds, Grecian and other, and bravo men with natural etoops. She saw all this, and more. She saw our rosy doorkeeper in company with a serions-mindcd man, well knowu to the Directors and exhibitors, approach a keg of bitters, and pause, emiling like clockwork.

Deftly our doorkeeper drew forth a key,—snch a technical key as vintners use,—and with pleasant alacrity inserted it in this keg. The serious man did not smile; he had a presentiment of coming fate. The key was turned, when crack! it broke, and the cordial liquor spouted on tho untasting floor. Our doorkeeper changed color, and seized the serious man's hand; with gentle force he placed the thumb and serious forefinger on the yawning spout; and therewith staunched the tide of life. That done, he drew a long breath, and looked with pride at the serions man. The serions man did not smile; he felt that there was a time for all things, and to every thing under heaven a scason; and he whispered hoarsely to our doorkeeper—"Fetch a plug!" "Ah!" said the doorkeeper, "I believe you; only hold fast as you love every good and perfect gift." And he withdrew, full of beaming comfort, to seek for plugs.

How long he stayed, or whether he ever returned, or in what condition he found the serions guardian of his casket, who can tell? For the lady says, that when the doorkeeper was gone, for the first time a smile irradiated the countenance of that solemn, serions man; he wrestled with himself, as if in prayer, and bent down his head in anguish of spirit, until he touched the hand that held the spout. But she saw no spouting; only the barrel, and one waiting for our rosy doorkeeper.

THERE is more mechanical skill reqnired in building a flight of stairs than iu erecting the whole frame-work of an ordinary house. HIBBERD, SANBORN & Co., South Point Mills, Berry street, make etair building a specialty, and have fitted up some of the finest jobs ever done in this city. They have the contract for the ornamental stair work of the Grand Hotel, to be opened in May next by Messrs. Johnson & Co., corner of Market and New Montgomery streets.

THE Austin (Reese River) *Reveille*, a daily noted for its repleteness in l cal intelligence, gives its readers the foll wing San Francisco item:

ENTERPRISE.—Dewey & Co., of the *Mining and Scientific Press*, of San Francisco, publishes a little paper called the *Daily Press*, which is devoted to incidents and matters of interest connected with the Mechanics' Institute Fair. The printing press is propelled by steam from the boilers outside the Pavilion.

AN IMAGINATIVE writer says: Woman is compounded of three articles—sugar, tincture of arnica and soft soap. Sugar, because of the sweetness which is apparent in most women—alas! that in some it should have acidulated into strong domestic vinegar; arnica, because in woman is to be found that quality of healing and soothing after the bruises and wounds which afflict us men in the great battle of life; and soft soap, for reasons too obvious to need specification.

THE BLAST for Hanscom & Co's furnace while smelting in the Pavilion on Wednesday evening, was furnished by a Stutevant blower, attached to Troadwell & Co's Hoadley portable engine. The blower mado 2,500 revolutions per minute, and Mr. Doane thinks he could havo nearly doubled its speed.

AN ill-natured fellow says thero is a decided difference between Providence, R. I., and Divine Providence.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.

THOMAS MOONEY, President.

August 2, 1869. 6v19 1m

Sheffield Scientific School

Of Yale College, New Haven, Conn.

This department of Yale College, instituted in 1840, and endowed with the National Land Grant in 1865, furnishes advanced instruction in the various branches of Mathematical, Physical, and Natural Science.

The School is under the direction of the President of the College, a Board of thirteen Professors in different special ties, and six assistant instructors.

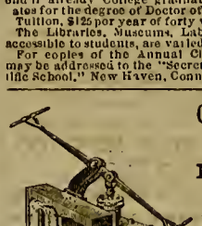
Regular courses of study, leading to the degree of Bachelor of Philosophy, conferred by Yale College, are arranged as follows: 1—CHEMISTRY AND MINERALOGY. 2—CIVIL ENGINEERING. 3—MECHANICAL ENGINEERING. 4—MINING ENGINEERING AND METALLURGY. 5—AGRICULTURE. 6—NATURAL HISTORY AND GEOLOGY. and 7—SELECT COURSE.

Advanced students are also admitted to optional courses, and if already College graduates, are received as candidates for the degree of Doctor of Philosophy.

Tuition, $125 per year of forty weeks.

The Libraries, Museums, Laboratories and Apparatus, accessible to students, are varied and extensive.

For copies of the Annual Circular and Report, letters may be addressed to the "Secretary of the Sheffield Scientific School," New Haven, Conn. 13v6-1y16p



Clark's Detached
DOUBLE-ACTINO
Lift and Force
PLUNGER PUMP.

Patented May 18, 1869.

Lifts water continually without check, or causing sudden strain in operating the piston, as is usual in the ordinary pump. The interior of the Pump is always submerged in its own action, and is always ready for use without priming. For economy and durability this Pump is sure to recommend itself for use in all places where water is required to be lifted or forced. The superiority of the plunger pump over cylinder pumps has been well tested, and needs no comments. For use as a ships' pump, mining pump, clearing cellars and other places where muddy water is to be elevated, this pump cannot be excelled, as the packing is protected from wear and from being cut by sand. Where the cylinder pump would be cut and worn almost useless by sand in a few hours, this pump will remain in good working order for years. In fact, it is the only new and reliable pump which has been invented since suction was first used for raising water, and will be the CHEAPEST and BEST Pump in use.

WILLIAM H. T. CLARK, No. 31 Third Street, San Francisco, is the inventor and patentee, to whom all letters for information should be addressed. 5

SPECIAL NOTICE.

TO DEALERS AND CONSUMERS

—OF THE—

H & L
AXLE GREASE.

Having received your liberal patronage and support during the last fifteen years, and desiring to further extend its consumption, and if possible meet the wishes of our Chicago friends, we have made a great reduction in prices, and from our long experience we will satisfy you that there is none BETTER, and through your liberal patronage that there is none CHEAPER.

HUCKS & LAMBERT,
144 Natoma Street.

Depot, 320 Jackson Street.

N. B.—We are prepared to furnish Bulk Packages to contractors on equally liberal terms.

McAFEE, SPIERS & CO.,
BOILER MAKERS
AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, light of the fall, and total length of pipe, as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. (v16tf

CALIFORNIA TRUST COMPANY.
421 California St., San Francisco.

Capital, - - - - - - $1,000,000.

HENRY L. DAVIS, President.
D. W. C. THOMPSON, Cashier.

This Company will transact all kinds of legitimate banking business on the most favorable terms.

Deposits received and accounts kept in Gold and Silver coin, or National currency, payable in kind.

Exchange drawn on New York in Gold or currency available at par in any part of the United States, and exchange furnished on Europe, India, China, etc., at lowest rates.

Collections and Disbursements made at all accessible points, and proceeds remitted without delay.

Interest allowed on Certificates of Deposit, Savings Accounts, Trust Funds, and on average daily balances of desirable check accounts.

Money to loan on U. S. Bonds, State, City and County Bonds, Local Stocks, Staple Merchandise, Real Estate and other good Securities.

The Company will act as correspondent for Banks and Bankers, and as agent in the transaction of all kinds of financial and trust business.

Bonds, Stocks, Papers, Jewelry, Silverware, etc., kept on special deposit in its large fire and burglar-proof vaults and safes, at moderate charges.

Trustees:

Henry H Haight,	John Currey,
William H. Snarp,	John H. Baird,
Jacob C. Johnson,	Chas. W. Hathaway,
Henry Barrolhiel,	John O. Eldridge,
Samuel Crim,	Henry L. Davis,
Charles J Deering,	Donald McLennan,
Charles M Plum,	Moses Rosenbaum,
Walter B. Cummings,	Henry J. Booth,
S. Heydenfeldt,	F. S Wen-linger,
Wm. Blackwood,	Henry C. Lee.

New York Correspondent,
First National Bank of New York.

HIBBERD, SANBORN & CO.,

STAIR BUILDERS,

South Point Mills, Berry Street,

Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters. 6v19-3m

New Mining Advertisements.

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment (No. 2) levied on the twenty-fifth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. shares.	Amount.
Blahoe, T H	unissued	1000	$200 00
Coy, Frank	unissued	1000	200 00
Creighton, F	2 to 11 inc-ea	100	200 00
Gibb, W T	1	1000	200 00
Gibb, W T	unissued	1000	200 00

And in accordance with law, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salerooms of John Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, Cal. on Monday, the twenty-fifth day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

SAM'L S. MURFEY, Secretary.

Office, 620 Montgomery street, over Sather's Bank, San Francisco, California. oc9

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	3	268	bal 78 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	10	1268	bal 127 75
J H H Williams	69	979	bal 92 21
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerigo	41	10	bal 1 00
W H Kelm	43	5	1 50
Otis V Sawyer	45	20	6 00
Otis V Sawyer	46	20	6 00
R O B McDonough	48	100	bal 10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	59	630	bal 63 00
J B Littlefield	61	630	bal 63 00
George H Russell	64	600	bal 133 12
S M Smith	74	200	bal 20 00
Samuel D Meyer	75	60	18 00
George B Merrill, Trustee	63	631	189 30
Otis V Sawyer	71	1200	bal 112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

OEO. H RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. se25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc9 GEO. H. RUSSELL, Secretary.

ELECTROTYPE, ENGRAVINGS, CUTS, ETC.—Our Job Printing Office is abundantly supplied with elegant engravings, ornaments, and other embellishments to suit the various branches of industry in this State

Mining Notices—Continued.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of September, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. SUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. sep25

Bucklin Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteenth day of September, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 40 Merchants' Exchange, California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixth day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the twenty sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. D'ELL STONE, Secretary.

Office, No. 40 Merchants' Exchange, California street, San Francisco. oct2

North American Consolidated Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty seventh day of September, 1869, an assessment of two and one-half cents (2½c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN ARMSTRONG, Jr., Secretary.

Office, 302 Montgomery street, San Francisco. oc12

Rippon Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of September, 1869, an assessment of twenty-five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, N. E. corner of Fifth and Howard streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twentieth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. F. BERNARD, Secretary pro tem.

Office, northeast corner Fifth and Howard streets, San Francisco, California. se25

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of September, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 408 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINCARD, Secretary.

Office, 408 California street, San Francisco. se11

Siempre Viva Silver Mining Company, District of Zaragoza, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of September, 1869, an assessment of one dollar and fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 314 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.

Office, 314 California street, up stairs, San Francisco, California se11

U. S. Grant Mining Company.—Location of Works: Carlisle, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of September, 1869, an assessment of fifty cents (50c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-sixth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the thirteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, No. 226 Clay street, San Francisco. oc2

Notice.—The adjourned Annual Meeting of the Stockholders of the WASHTELLO MINING COMPANY will be held on MONDAY, October 18th, 1869, at the office of J. F. Hubbard, Esq., Room No. 3, Dayward's Building, California street, at 8 o'clock P. M.

DANIEL McLEOD, Secretary.

San Francisco, Sept. 24, 1869. se25-2w

Job Printing.

We employ the best workmen in this department, and promise our customers—(many of whom have patronized the office for over eight years)—the best of work at very fair and uniform rates.

We are constantly adding new presses, type, and other material to our stock, making our facilities good for doing a wide range of work for merchants, mechanics, inventors, manufacturers, and tradesmen of all classes.

TO ENGRAVING AND ELECTROTYPING, for illustrating books and circulars, we pay particular attention, guaranteeing our customers satisfaction in this line difficult to be secured elsewhere.

Printing in colors, bronze, plain and ornamental style promptly done. Especial care given to working engravings

SPAULDING & BARTO,
"Mining and Scientific Press" Job Printing Office,
No. 414 CLAY STREET, S. F.

Spice from the Daily Fair Press.

The first odd-fellow—Adam.

No wrong will ever right itself.

A Musical cow hell(e)—A siuging milk-maid.

Benevolence is the cream of the milk of human kindness.

How could "Old Dog Tray" be faithful, and at the ssme time he-Tray?

Why are friends like cheese? Because the oldest is the strougest.

The embers of the dying year—September, November and December.

Men differ considerably, hut gentlemen are alike wherever you meet them.

Shringfield is to erect a bronze monnment to her soldiers. Fisk, Jr., contribntes the brass.

J. Ross Bhowne is to sell China ware to *Harper's* in the shape of descriptive articles and plates.

Money and morality are very much akin. The principle never loses sight of the interest.

Many a writer for the press has gained greater fame by his blunders, than hy auy thing else.

Why is a washwomau the most crnel person in the world? Becanse she daily wrings men's bosoms.

Truth looks best when nearest naked, while falsehood would he repnlsive were it not for the heauty of its dress.

Explanations of the Harvard defeat are still coming in. We have had enough already to account for 250 defeats.

The msjority of men go throngh the world much the same as the water—seeking the lowest levels, so as to go easiest.

What is that which the rich mau wants, the poor man has, the miser spends, and the spendthrift saves? Nothing.

Mrs. Porter is thonght to have the inside track in the race for the Lonisville post-office. We willingly sup-Porter.

The man who never makes any mistakes is a good deal like an augle-worm which has not sufficient conrage to get far from its hole.

Aggravating.—One of the couicts in the New York State prison, has fallen heir to $10,000, but can't get out to enjoy it for ten years.

A humbug iz like a hladder, good for nothing till it iz hlowed, but then aint good for nothing after it iz pricked.—*Josh Billings.*

A Novel establishment, at which dogs are to be washed and thoronghly freed from fleas, at fifty cents each, has heen opened in New York.

An old bachelor thinks the trails of ladies' dresses infernal machines, from the fact that a blow np took place directly after he had put his foot on one.

An Arkansas hoy got behind a bnsh the other day, and imitated turkey talk so successfully, that he got a charge of hnck-shot from his grandpa's fowling piece.

Two enormons sides of California hacon were to be seen in the Fair on Saturday. They helonged to Mr. James Bacon, of Petaluma, and weighed 287 pounds.

The papers are heginning to atyle Gen. Sherman "the coming man." The Georgia people have no wish for him to come that way again.

What is the difference between a dog belouging to a sailor and one of the priucipal planets? One is the tar's dog and the other is the dog star.

Appropriate.—The lady who wore the longest trail to her dress at a grand hall in New York, was the danghter of the contractor for sweeping the streets of that city.

"That's very singular," said a yonng lady to a geutleman who had jnst kissed her. "Oh! well, miss," was the reply, "I will soon make it plural," and the villaiu did.

Mythology tells us that Jo died hecause of her intense love for Jupiter; bnt the charm of the romautic story has lately heen destroyed hy a chemist discovering iodide of potassinm.

The London *Saturday Review* is of opinion that Americans speak "a lauguage resembling the Englisb, and with an emphasis and intouation which resembles nothing ever heard before."

A Good Cause for Divorce.—Mrs. Abby Stone has applied for a divorce from her husband, James Stone, on the gronud of his gettiug drunk, wheu he becomes a "whetstone," which she alleges she does not desire, as she is sharp enongh to do without one.

Machinists and Foundries.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GLASGOW

Iron and Metal Importing Company

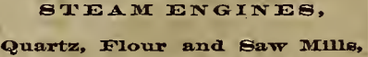
Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE, Manage.

PACIFIC FILE WORKS,



No. 53 Beale Street, bet. Market and Mission,

SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

2v17-3m **T. G. DURNING & CO**

JAMES MACKEN,

COPPERSMITH,

226 Fremont st., bet. Howard & Folsom

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.

13v11

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

All kinds of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Brsces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. GALLAGHER. J. WEED V. KINGWELL.

9v13-1y

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,

Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebraied

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand. Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States

1v17tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

And all kinds of Mining Machinery.

Also, Hay and Wine Presses made and repaired with neatness, durability and dispatch.

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders, manufactured to order.

Front Street, between N and O streets,

14v11 Sacramento City

PALMER, KNOX & CO.,

Golden State Iron Works,

Nos. 19, 21, 23 and 25 First Street,

SAN FRANCISCO.

MANUFACTURE ALL KINDS OF

MACHINERY,

STEAM ENGINES AND QUARTZ MILLS

DUNBAR'S IMPROVED

Self-Adjusting Piston Packing,

Saquires no springs or screws; is always steam tight: without excessive friction, and never gets slack or leaky.

WHEELER & EANDALL'S

NEW GRINDER AND AMALGAMATOR

HEPBURN & PETERSON'S

AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco,

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in whole or half barrels. Black Lead, Coke and Soapstone ground to order. Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

10v18qr

CALIFORNIA FILE MF'G CO.

No. 437 Brannan Street,

Between Third and Fourth, San Francisco.

W. WUSTHOFF, L. KRAMER, M. HARRIS. J. BURKE.

NEW FILES OF EVERY DESCRIPTION

ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19-qy

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel,

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

13 and 15 Fremont street, near Market, San Francisco.

10v14qr

CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

143 Beale St., bet. Mission and Howard,

SAN FRANCISCO.

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17-qy **J. WEICHHART, Proprietor.**

SAN FRANCISCO

Pioneer Screen Works.

JOHN W. QUICK,

203 Fremont street, near Howard, San Francisco.

Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call speeial attention to my slot cut and slot punched Screens which are attracting much attention and giviug universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

16v16q No. 28 Fremont street, San Francisco.

HUGH H. LAMONT. WM. CALDWELL.

Cyclops Engine and Machine Works,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

ap17-3m **113** Beale street, near Mission, S. F.

STOCK CERTIFICATES,

STOCK TRANSFER JOURNALS,

STOCK LEDGERS,

ASSESSMENT RECEIPTS,

And all other Blanks, Blank Books, etc., required by Mining and other Corporations, kept on hand or printed of order on short notice, at moderate prices, at the office to the *Mining and Scientific Press.*

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,

SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Sorizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hausbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Valuable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.

O. CHAUVIN.....Agent.

OFFICE, 500 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the vellous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find as much benefit in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever:* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the Inabilities peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever:* Gout, *when the patient is still able to walk;* Gravel, and in case of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

MEUSSDORFFER,

HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL.

635 and 637 Commercial street.....San Francisco.

125 J street.....Sacramento.

Corner of D and Second streets.....Marysville.

72 Front street.....Portland, Oregon

Our wholesale House, 628 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest assortment in this State. Every Steamer brings the latest tissued novelties from Europe and New York, which can be found at all the above stores, at moderate prices 23v16-3m

SAFE AND PROFITABLE. — The French Savings Bank, one of the model institutions of the Pacific coast, netted a profit of 11 per cent. per annum on its business during the six months ending Sept. 30th. Such a profit on the large business of the bank during a period of business depression, shows that the managers understand their business. The deposits have greatly increased of late. The people know that it is safe and profitable to place their money in the French Savings Bank.

THE LATEST FASHION.—An enterprising Yankee has introduced paper petticoats, not to wash. They are all the rage at the "Hub." They cost only 37½ cents each, or about as much as it costs to wash one here. The invention is one of great value to practical young ladies when at the seaside. Owing to their diminutive size, it is impossible to "write a sonnet on a bonnet," but you can write a whole novel on a petticoat. We are in favor of the papers all the time, whether as blankets or petticoats.

THE ENGLISH papers say that the British soldiers are hereafter to wear full beards. We guess there will be a great demand for capillary lotions, as not a few of the young Britishers are as bare of beard as a Chinaman.

SAN FRANCISCO is a fast place. The drive home from the cemetry at Lone Mountain is like a race course, full of fast teams.

Machinery.

VARNEY'S PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Millmen are invited to examine these pans and sellers for themselves, at the office, **229** Fremont street,

1v1 San Francisco.

The Excelsior Force Pump.

For all Purposes the Best.

ALL PUMPS WARRANTED.

BRITTAN, HOLBROOK & CO.,

AGENTS,

111 and 113 California St.,

SAN FRANCISCO.

9v19-2m

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

Notice to Miners, Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,

8v13-1y Stova Stora, No. 1 Clay street, below Davis.

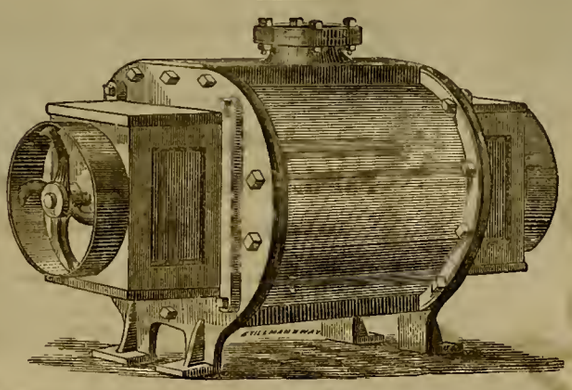
ROOT'S PATENT FORCE BLAST ROTARY BLOWER.

MANUFACTURED BY KEEP & BARGION,

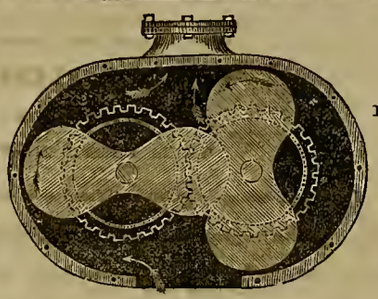
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,

Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.



ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER Than any Blower Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

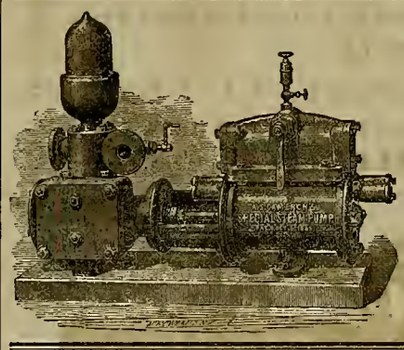
CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Preasure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,

4v16 3m **Globe Iron Works, Stockton, Cal.**



CAMERON'S STEAM PUMPS.

PICKERING'S Engine Regulators.

GIFFARD'S INJECTORS.

MARINE ENGINES.

SURFACE CONDENSERS.

DAVID STODDART,

114 BEALE STREET.

Rails, Newel Posts,

AND BALUSTERS,

Constantly on hand for sale, and shipped, together with all kinds of

STAIR WORK,

To any part of the coast. Practical workmen sent, when desired, to put up the same.

Work Warranted to Fit

by simply sending a correct ground plan of stairs, together with height of story.

Wood-Turning and Scroll Sawing of all kinds promptly executed.

☞ Spanish Cedar, Walnut and California Laurel always on hand for sale.

Langland & Cameron,

STAIR BUILDERS,

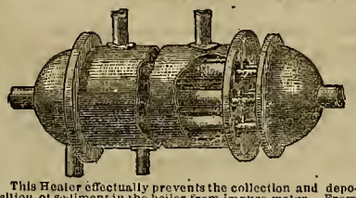
309 Market street,

And 485 and 487 Brannan street,

SAN FRANCISCO.

16v16-1y

CROSS' COMBINED Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,

16v18-3m Patentee, Sacramento, Cal.

THE RISDON Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.

CAPITAL.....$1,000,000.

Corner of Beale and Howard Streets,

SAN FRANCISCO.

Steam Engine Builders, Boiler Makers, Machinists, Founders, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.

Directors:

S. F. Butterworth, Wm. Norris, Lloyd Tevis, Joseph Moore, James Pollock, Chas. E. McLane, John N. Risdon.

JOHN N. RISDON.....President.
JOSEPH MOORE.....Vice President and Superintendent.
LEWIS R. MEAD.....Secretary.

21v17-qy

REGISTER YOUR LETTERS containing money addressed to us, or we can not be responsible. Remittances by Express must be in packages, prepaid. When practicable, it is best to remit by draft, or order, on some San Francisco bank or firm.

Ayer's Cathartic Pills,

For all the purposes of a Laxative Medicine.

Perhaps no one medicine is so universally required by everybody as a cathartic, nor was ever any before so universally adopted into use, in every country and among all classes, as this mild but efficient purgative *Pill*. The obvious reason is, that it is a more reliable and far more effectual remedy than any other. Those who have tried it, know that it cured them; those who have not, know that it cures their neighbors and friends, and all know that what it does once it does always—that it never fails through any fault or neglect of its composition. We have thousands upon thousands of certificates of their remarkable cures of the following complaints, but such cures are known in every neighborhood, and we need not publish them. Adapted to all ages and conditions in all climates; containing neither calomel or any deleterious drug, they may be taken with safety by anybody. Their sugar coating preserves them ever fresh and makes them pleasant to take, while being purely vegetable no harm can arise from their use in any quantity.

They operate by their powerful influence on the internal viscera to purify the blood and stimulate it into healthy action—remove the obstructions of the stomach, bowels, liver, and other organs of the body, restoring their irregular action to health, and by correcting, wherever they exist, such derangements as are the first origin of disease.

Minute directions are given in the wrapper on the box, for the following complaints, which these *Pills* rapidly cure:—

For **Dyspepsia** or **Indigestion, Listlessness, Languor** and **Loss of Appetite**, they should be taken moderately to stimulate the stomach and restore its healthy tone and action.

For **Liver Complaint** and its various symptoms, **Bilious Headache, Sick Headache, Jaundice** or **Green Sickness, Bilious Colic** and **Bilious Fevers**, they should be judiciously taken for each case, to correct the diseased action or remove the obstructions which cause it.

For **Dysentery** or **Diarrhœa**, but one mild dose is generally required.

For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins**, they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.

For **Dropsy** and **Dropsical Swellings** they should be taken in large and frequent doses to produce the effect of a drastic purge.

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As a *Dinner Pill*, take one or two *Pills* to promote digestion and relieve the stomach.

An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.

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18v12

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Our Patent Agency.

The PATENT AGENCY of the MINING AND SCIENTIFIC PRESS has been signalized with remarkable success during the past few years. The importance to the inventive genius of this coast of a thorough and reliable agency for the solicitation of LETTERS PATENT from the United States and foreign Governments cannot be over-rated, and the Proprietors of the PRESS, feeling the responsibility which rests upon them, and the reward which must follow the faithful performance of their trusts, will take care to afford inventors every advantage to be secured to them through a competent and responsible agency upon this coast.

Mechanics' Institute—Monthly Meeting.

Last evening the usual monthly meeting of the Mechanics' Institute was held at their rooms on Post street. The President, A. S. Hallidie, Esq., occupied the Chair, and congratulated the meeting on the success of the Industrial Fair. He said there stood over from last year a debt on the Pavilion and exhibition of $7,000. In addition to this an expenditure of a further sum of $7,000 had been made in repairing the building and rendering it snitable for the purposes of the Fair this year. The expenses of maintaining the Fair amounted to $350 or $400 per day. Up to yesterday, the total receipts had been $51,000; so that they would be enabled to reduce their debt very materially.

It was not, however, the intention to apply the whole of the net proceeds of the Fair to the redaction of the debt, although a considerable proportion would be so applied. He thought they might well afford to employ a portion in adding to the scientific works in the library, and in other ways rendering their Institute more useful.

The Polytechnic Lecture.

Mr. Hallidie called upon Mr. D. R. Smith, who, according to previous announcement, delivered an interesting lecture upon "Naval Architecture." The speaker, after some preliminary remarks upon what constituted "theory," said that the theory to be presented at that time had reference to ship building. A clipper ship, or an ocean steamer, with its freight aboard, or a little skiff with its single oarsman, was simply "a weight, to move." Heretofore, persons engaged in investigations in this direction, have failed to recognize as a prominent fact this self-evident proposition. They have possibly arrived at the best form for a vessel of a given length, breadth, depth and displacement; but they have failed to discover the fact that in constructing a vessel to carry a certain amonnt of cargo, the weight of the hull depends upon its form. As the form of greatest bnoyancy varies from that of least resistance, it follows that as we abandon the former and increase the latter, we increase the weight of the hull.

In practice, we have fallen too much in love with the beautiful, as displayed in the form of least resistance; and have been too indifferent to the plainer, but more substantial form, set forth in the rude theory. The importance of reducing the weight of the hull has not been sufficiently considered. We regret that want of space will not allow of our giving a full report of Mr. Smith's lecture, for which he received the thanks of the Institute.

San Jose Fruit.—Mr. C. W. Pomeroy, of San José, has regaled this office with two generous sized boxes of choice and rare frnit, including the finest apples we have tasted this season. He has for many years taken great care and pleasure in producing the finest and best cultivated varieties of fruit, and has succeeded to a noticeable degree.

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I also take pleasure in informing the public that during my recent visit to the East I became Sole Agent for

L. W. POND'S CELEBRATED TOOLS,

ACKNOWLEDGED TO BE

THE BEST NOW MADE.

I shall keep constantly on hand all descriptions of

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13v19-16ptf

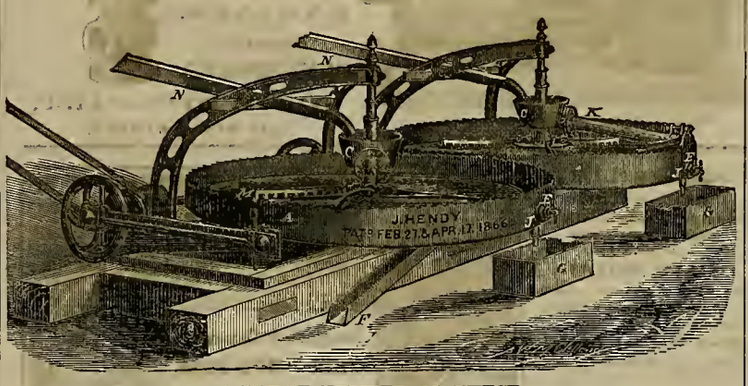
PREMIUM FOR BEST CONCENTRATOR

AWARDED BY THE

MECHANICS' INSTITUTE, 1868,

ALSO AT THE STATE FAIR FOR 1868,

To J. HENDY.



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Stronger and more Durable than Ever.

Office of North Star Mine, Grass Valley, Nov. 12, 1868.

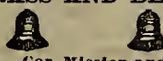
Joshua Hendy, Esq.—Dear Sir:—I take pleasure in certifying to the efficiency of the two last Concentrators ordered from you. We have run them steadily since July last, with but a very trifling expense for repairs. The additional length of step is a decided improvement. The first six sent to us have run steadily for nearly nine months, and are still doing good work. * * * The concentrations from the eight pans alone much more than pay our entire surface expenses. Without them we should lose a large proportion by any system of concentration now in use. The eight Concentrators receive the pulp from our 24 stamps, which are crushing 1,040 tons per month. Our sales of Sulphurets last month amounted to 70 tons, or nearly 7 per cent. of the mass crushed. The sulphurets from the reconcentration, contained about 10 per cent. sand. In addition to their properties as concentrators, they have done us good service as amalgamators, they having saved us the past month 50 ounces of hard amalgam, worth $350, which otherwise would have been lost.

Respectfully yours, J. H. CROSSMAN, Supt. N. S. Mine.

J. HENDY, Patentee.
Office at Union Iron Works.

13v17tf

W. T. GARRATT,
City
BRASS AND BELL FOUNDER



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United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs A. S. Hallidie & Co, Agents Morgan Crucible—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. Branch Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,
Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENSERG & MOORE.

Messrs. A. S. Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede superiority for them. We think they will average 45 pourings of brass.
GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S Hallidie & Co.—Gents.:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Addis, Gaultier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,
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MINING AND SCIENTIFIC PRESS.

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, OCTOBER 16, 1869. VOLUME XIX. Number 16.

Mechanics' Institutes.

Mechanics' Institutes originated in England, a little over 200 years ago, since which time they have been gradually increasing in number until there are now about 250 in the kingdom, embracing a membership of over 30,000—a large portion of whom are the real workingmen of the country. The most of the English associations have a three-fold object—the forming of classes mostly for night instruction; the sustainment of one or more annual courses of lectures on popular and interesting subjects, and the gathering of libraries for the use of members and subscribers. One of the most prominent, if not the very foremost of all of the English institutions, is the one at Liverpool, which numbers about 3,500 members; keeps up three day schools with an average attendance of about 900 pupils, and 600 evening scholars, divided into a suitable number of classes. Fifty teachers are constantly employed, at an aggregate salary of about $30,000. Of course, the institution is liberally endowed.

The first institution of this character established in the United States, if we mistake not, was the Boston Lyceum, established in 1826. Mechanics' Institutes have been of great service to the young men of all places wherever they have been established, and are especially worthy of support and encouragement by all enlightened and liberal minded men. They have been the means of training up hundreds and thousands to lives of usefulness in the industrial arts; and they have done much to propagate habits of industry and of studiousness among the masses. They have been of great service to young men in every way.

The San Francisco Mechanics' Institute has made a most noble beginning, and bids fair to become in a very few years, one of the noblest and most useful in this country. That its efforts at usefulness are fully appreciated, are amply shown by the liberal patronage which has ever been extended towards its occasional public exhibitions, which are its only sources of income beyond the voluntary contributions and dues from its individual members. Its field of usefulness and efforts in that direction will be extended just in proportion as it is supplied by means.

THE performance of the 12th Artillery Band at the Pavilion Monday night, was quite a success; the leader, Mr. Heydenreich, being himself a musician of some originality,—the composer of half the peices that were performed. The detachment of troops to which this band belongs have just made the overland railroad trip, and the Railroad Galop of last night is the result of Mr. Haydenreich's musical ears being for seven days exposed to the clattering and wheezing noises of the overland train.

ALPINE MINER.—This paper is filled with interesting matter relating to mining, and from its columns one is lead to the conclusion that Alpine county is destined one day to loom up favorably, in comparison with other mining regions, where legitimate mining has never had the opportunity to produce its rewards.

WM. H. MURRAY, our traveling Agent, is now on a tour through Yuba, Colusa, Nevada, Placer and El Dorado Counties, and will look after the interests of the PRESS on that route.

The Union Foundry—Locomotive Building.

There is probably no branch of machinery manufacture which imposes greater responsibilities upon the builder, or more severely taxes his mechanical ingenuity, than the construction of railroad locomotives. Strength, durability, speed, perfect proportions and beauty, are demanded at his hands. Upon a single beam, brace, bolt, tie or spring may depend the lives of hundreds. This branch of business, on the Pacific Coast, has thus far been mostly entrusted to Booth & Co., of the Union Iron Works, and it is with pride that the proprietors of that establishment and Californians generally, point to the result of their labors, with the confident assurance that in all the important essentials of good locomotives no establishment in the country has turned out better work.

The accompanying engraving represents the first locomotive turned out by these works—the "California," for the San José Railroad, which made its trial trip on the 30th of August, 1865, drawing a large number of cars, filled with invited guests, and moving, a portion of the distance, at the rate of a mile a minute.

Since that time this establishment has turned out eleven others, or twelve in all—first class locomotives, as follows:

The California, Atlantic and Union, for San José Railroad.

The A. A. Sargent for the Central Pacific, and the Calistoga for the Napa road.

The Mount Diablo, Bostou and Sampson were built for the Pittsburg road, to take coals from the Mt. Diablo coal mines to the Bay shore landing on the San Joaquin.

These locomotives were built to overcome a maximum grade of 276 feet per mile.

The D. O. Mills was built for the Black Diamond coal mine, to overcome the extraordinary grade of 305 feet.

The Lyon, Ormsby and Storey, have been constructed for the Virginia and Truckee roads, with grades of 116 feet, with exceedingly short curves. The last named was shipped from this city, via the San José and Western Pacific roads, on Wednesday last.

All these locomotives have been constructed with everything A No. 1, designed to do good service, and the most of them, as already observed, upon extraordinary high grades and short curves. We are promised, at an early day, some statistics, going to show the superior economical working of these engines.

FIRST FULL-SIZE CALIFORNIA-MADE LOCOMOTIVE—H. J. BOOTH & CO., BUILDERS.

ELEGANT GAS FIXTURES, ETC.—Root & Nye, 421 Kearny street, make a very fine show of gas fixtures, just within the entrance to the music room. They exhibit chandeliers in blue and gold, gold gilt, French and English bronze, Egyptian, Gothic and Flemish styles, chandeliers with center lights arranged to drop; Gothic standards, in brouze and gilt figures, for drop lights; marble ornaments; bronze figures, and gilt, bronze and marble clocks. Messrs. Root & Nye, who have recently opened their store on Kearny street, have been for some years engaged in the manufacture of gas fixtures at the East, and are therefore fully posted in the business. They receive all new styles from the East and Europe as fast as they appear there, and intend to keep as full and complete an assortment of new style patterns as can be found on the Pacific Coast. Their exhibit at the Pavilion, fine as it is, hardly does justice to the large and elegant assortment at their store on Kearny street. They have a particularly fine assortment of mediæval and architectual church fixtures, Ecclesiastic, Masonic and other emblems. Call and see them.

San Francisco Yacht Club.

This flourishing and creditable outgrowth of the wealth of San Francisco, is developing itself into an institution, having now its club house on the Long Bridge, and its half-a-dozen sea-going yachts, whose journeyings around the Pacific world we hope will, ere long, have to be chronicled, and will add to the renown of the commercial metropolis and law-giving mistress of the great ocean. Last Saturday the club house was formally opened with suitable festivities; and on the coming Saturday there will be a regatta. Have we in our midst amougst the wealthier class, genuine adventurers, yachtmen worthy of the name? San Francisco habor is unfavorably situated for the development of yachting tastes; but the north western coasts, the islands of Polynesia and the East India Archipelago, afford the very best yachting ground in all the world for adventurous people of leisure, who will here assume the guise of the inevitable Yankees on the reconnoitering lines of manifest destiny.

SEMI-MONTHLY TROY "POLYTECHNIC." A very well-gotten-up engineering and collegiate journal under the title of *The Polytechnic*, has been started by Montague L. Marks and other graduates, attachés, and friends of the Troy Polytechnic Institute, at a subscription price of $4 per annum. The idea of thus binding the graduates together, and keeping them in communication with that institution, is a good one and worthy of being sustained. But the *Polytechnic* is to be devoted specially to the advancement of polytechnic science and scientific education, a field in which a worthy laborer in this country will be capable of doing incalculable good.

Mechanical Progress.

High Pressure Furnace—Bessemer's Last.

Engineering for September 17th describes and illustrates this latest invention of Henry Bessemer,—and furthermore gives an elaborate editorial on the subject. It is, in brief, a cupola furnace in which very great intensity of heat is obtained by means of combustion of the gaseous products therein under pressure, the outlet for the escape of flame being very small compared with that of the ordinary cupola furnace. The idea suggested itself to Mr. B. while experimenting upon the production of high heat from the solar rays, for the purpose of metallurgical operations. While making preparations to construct a gigantic burning lens, twenty feet in diameter, he was led to consider the cause of the intensity of the solar heat. A calculation entered into by the journal aforesaid, shows that the quantity of heat falling on a square mile of the earth's surface is sufficient to melt 100 tons of cast iron per minute! This is a far more intense heat than can be obtained by the combustion of the same elements in our own atmosphere. It occurred to Mr. Bessemer that as the force of gravity at the sun's surface is 27.6 times as great as at the surface of the earth, all the incandescent solar gases must be maintained in a state 27.6 times as dense as they would be if they formed a portion of our own atmosphere; and he was struck with the idea that the great intensity of the solar heat might be simply due to the fact that the combustion took place—terrestially speaking—under excessive pressure. Mr. Bessemer accordingly designed a small cupola furnace, so made that the products of combustion, instead of escaping freely, were checked, so that the pressure maintained within the furnace was considerably above that of the atmosphere. "With this furnace,"—says *Engineering*,—"Mr. Bessemer has obtained results which bid fair to revolutionize many of our metallurgical processes. So far the furnace has only been worked at pressures of from 15 to 18 lb. per square inch above the atmosphere; but even with these pressures, the temperature obtained is such that steel, and even wrought iron, may be melted even more readily than cast iron in an ordinary cupola. Thus, a piece of 2 in. square bar iron, a foot long, and weighing 13 lb., was introduced cold into the furnace, and was completely fused in five minutes and a half; while 3 cwt. of wrought-iron scrap, also introduced cold into the same furnace, was run off in a complete fluid state in fifteen minutes! Startling as such results are, they become more startling when it is remembered that they are produced in a small model furnace without a much greater expenditure of coke than would take place in an ordinary cupola furnace melting cast iron. For, although Mr. Bessemer uses blast at a pressure of 20 lb. or so per square inch, yet its effective pressure, or that which causes its flow through the tuyeres, is only the difference between this pressure and that within the furnace; and the rate of combustion of the fuel, therefore, is not much greater than it would be in an ordinary furnace using blast at a pressure equal to that difference. * * Theoretically, the system affords a means of producing absolutely any temperature whatever, simply by increasing the pressure under which the combustion is allowed to take place. It is probable that the system will serve more important ends than even steel melting, and that it may lead to alterations in our iron manufacture scarcely dreamed of. Who knows whether we may not one day distill iron as we now distill zinc and other metals of its class?"

New Method of Tinning Copper.—Herr Hiller dissolves 15 parts of salt of tin in 150 of water, and adds a solution of 30 parts of caustic potash in 300 parts of water. The objects to be tinned are put upon a perforated tin funnel, which is then placed in the solution. The whole is heated over a fire while the objects are stirred with a tin rod. In a few minutes they are coated with a layer of tin.

Watt was Right.

From the address before the British Association at Exeter, by the President, C. W. Siemens, F. R. S., we quote the following:

"James Watt was not satisfied to exclude the condensing water from his working cylinder and to surround the same by non-conducting substances, but he placed between the cylinder and the non-conducting envelope a source of heat in the form of a steam-jacket filled with steam at a pressure somewhat superior to that of the working steam. His successors have not only discarded the steam-jacket, and even condemned it on the superficial plea that the jacket presented a larger and hotter surface for loss by radiation than the cylinder, but expansive working was actually rejected by some of them on the ground that no practical advantage could be obtained by it. The modern engine, notwithstanding our perfected means of construction, had, in fact, degenerated in many instances into a virtual steam meter, constructed apparently with a view of emptying the boiler in the shortest possible space of time. It is only during the last twenty years that the subtle action of saturated steam (in condensing upon the sides of the cylinder when under pressure, and of re-evaporating when the pressure is relieved toward the end of each stroke) has been again recognized and insisted upon by Lechatelier and others, who have shown the necessity of a slightly superheated cylinder in order to realize the expansive force of steam. The result has been a reduction in the consumption of fuel in our best marine engines from 6 lb. or 8 lb. to below 3 lb. per gross indicated horse-power."

Chatelier's Steam Brake.—The objections to reversing the gear of a running engine are great. *The Engineer* says: "The hot gases of the chimney are exhausted out of the smoke-box and forced into the boiler, heating the cylinders and shaking the joints of the boiler. The piston rods get heated, the packings carbonize, the slide valves bite on the port faces, the injectors cease to act from the presence of incondensible gases in the steam, and, in some classes of engines, the reversing handle is often dangerously thrown back. Now M. Le Chatelier has proved that all these inconveniences may be remedied by simply leading a small tube from the boiler to the bottom of the exhaust pipe near the cylinders. The 8 to 40 pounds of hot water per minute thus delivered under the boiler's pressure are instantaneously converted into a fine spray by contact with the hot metallic surfaces of the cylinders and pistons. While cooling them, and absorbing the heat produced in the motion of the parts, the steam produced not merely acts as an elastic brake, but it may be made to cause a discharge from the blast pipe sufficient to keep out any gases from the smoke-box. The apparatus may, therefore, be said to consist of a pipe from an inch to an inch and a quarter diameter, and a common tap."

Martin's Patent Piston.—T. H. Martin of Swansea, Eng., read a paper at the late annual meeting of the Miners' Association of Cornwall and Devon, on pistons,—in the course of which he gave an illustrated description of his own, recently patented. We quote one paragraph which will give an idea of its construction:

"This invention consists in the introduction of a valve in the body of the piston, having chambers formed in its interior at each end. Around the sides or walls of these chambers, and communicating with the interior of the piston, are any convenient number of ports or openings. These, as the valve is forced to and fro alternately, communicate with the interior of the piston, allowing the steam to press or tighten the rings against the sides of the cylinder."

Car Starter.—A Buffalo railroad man has invented a new car-starter and brake for street cars. It consists of an ingenious arrangement of friction wheels, by which he throws a spring into gear; and, when the brake is taken off, the spring starts the car ahead, without any effort on the part of the horses.

A New Plane.—The latest plane is an iron one in which the tendency to "stick" to the wood, which has been one of the objections to other planes, is completely obviated by longitudinal grooves on the face.

Scientific Progress.

The Independent Existence of Force.

Prof. Walling, of Lafayette College, read a paper at the Salem meeting of the American Association, of which Prof. Wurtz gives in the *Gas Light Journal* an abstract sanctioned and revised by the author. After alluding to the high estimation in which the doctrine of the conservation of force is justly held, he remarks that serious difficulties are encountered whenever we attempt to state the law clearly, and demonstrate its applicability to facts; owing to a want of precision in the definitions of the terms matter and force, and a failure to recognize the *independent* existence of force. The usual enunciation of the conservation theory is that the aggregate amount of energy in the universe is unchangeable in quantity. Now, as the amount of energy which a moving body possesses, depends upon on its velocity, it follows, if we suppose that all energy is conserved, that there can be no diminution of velocity in any part of the physical universe without a corresponding increase in some other part, and *vice versa*. But a pendulum, if raised and allowed to fall gradually acquires energy, which it gradually loses again as it rises on the opposite side of the lowest point; and it cannot be shown that this energy which appears and disappears is drawn from or imparted to any other material body. So with the heavenly bodies which approach and recede from each other in accordance with the laws of gravitation. So also with the atoms of bodies; which are not in contact, but approach and recede from each other in continually recurring cycles almost inconceivably brief.

Every physical phenomenon indicates that the total energy of the universe, instead of being constant, is essentially variable. It is only because the periods of loss and gain are, in atomic motions, so brief, that their energy *appears* to be constant, for the reason that we can only estimate the *mean* energy, which is *really* constant. The phrase "potential energy" has been introduced to indicate that energy which has disappeared in a cyclical motion, being that which the *position* of the body makes it possible to acquire in the future. Thus, when the pendulum is at its highest point it has no *actual* energy, for its motion is entirely gone. But it is so situated that it has an available space to fall through, in which gravity may again act upon it to impart actual energy. It is therefore said to possess "potential energy;" that is, it has a possible energy in the future.

In the same way, chemical atoms or molecules, for example, those of carbon or hydrogen have a "potential energy," due to their possible union or "falling together" with atoms of oxygen, and when this falling together takes place, the actual energy of combustion is manifested. If *all* the actual energy of combustion could be expended in effecting the separation of the combined atoms, it is evident that the energy which has been developed by the union would be just sufficient to again effect a decomposition of the carbonic acid or water resulting from the combustion, restoring the component atoms to their original condition. Radiation, conduction, etc., of course prevent this, and the combined atoms maintain their union until they are separated by an energy which is superior to that with which they unite.

In general, the maximum potential energy of cyclical motions, like those of the pendulum, the planets, and the revolving or vibrating atoms, is equal to their maximum actual energy; and since whatever is taken from one is added to the other, *the sum of actual and potential energies is a constant quantity*, and this is the way in which the theory of conservation of energy is maintained. All difficulty is removed if we admit the existence of force as a distinct entity in an *independent condition*, as has been recently advocated by such men as Faraday, Waterston, Croll, and Sir John Herschel. The force which becomes associated with matter is then supposed to be drawn from an external, universal store, and restored to it when dissociated.

Action of Plants in Artificial Light.—M. Prilleux has found that solar light is not indispensable to the decomposition of carbonic acid by plants. By operating with care on plants under the influence of the electric, or the magnesium light, he succeeded in obtaining an evolution of oxygen.

California Fossils in Michigan.

We clip the following from the Yale *Courant's* condensed report of the proceedings at the meeting of the Board of Regents of the University of Michigan, Sept. 21st:

"Professor Winchell made a lengthy report on the museum. It appears that two large collections have been added during the year: one of plants and insects was donated by the widow of the late Dr. G. S. Ames, of Niles; the other, purchased for $200 from the executors of David Van Vechten, consists of 1,573 specimens, which embrace some very interesting mammalian remains from Table Mountain, California, among which are teeth and bones of *mastodon;* tooth of an elephant; skull and bones of *Bos (latifrons ?);* bones and teeth of a fossil horse, and fragments of the skull and femur of man."

We make a note of this, in order to keep track of the specimens for the benefit of future students of palæontology in California. We shall do the same whenever we find similar memoranda from any other State. It will thus be made an easy matter for such students, with the aid of the then ancient files of the Mining and Scientific Press, to hunt up and examine what specimens they require for illustration; it being merely necessary to make the tour of the United States for that purpose. The enlightened Legislature of that distant day will doubtless appreciate our foresight.

Böttger on Occlusion of Hydrogen.—"Whilst repeating some of Graham's experiments, under varied conditions, Böttger obtained some interesting results. He employed a battery of two Bunsen cells, strongly excited, and, as electrolyte, water, rendered feebly sour with pure sulphuric acid. The anode was a plate of platinum foil, and the cathode a square inch plate of palladium, of the thickness of stout note paper, removed about two inches from the platinum, and previously covered on both sides with a pretty thick porous coating of electrically-deposited so-called palladium black. After the circuit had been closed about a quarter of an hour, and it appeared that the palladium was saturated, it was taken out of the liquid and dried quickly between folds of blotting paper; in a few moments its temperature rose to at least 200 deg. Cent. If, after withdrawal from the liquid and quickly drying, such a piece of palladium he wrapped up tightly without loss of time in gun cotton, the latter explodes after the lapse of from three to five seconds. Though before its first saturation with hydrogen the plate of palladium could scarcely be bent with the fingers, it was noticed that after it had undergone a heating it was distorted in a remarkable manner."

Jaconsite.—This is a new mineral described by M. Damour before the French Academy. It was found at Jacobsberg, in Sweden, in a bed of crystalline limestone, and associated with needles of white mica and small grains of native copper. It is crystallized in regular octahedrons, which are rarely complete and generally deformed by the pressure occasioned by their being crowded together. It is opaque and of a deep black color, but exceeding brilliant. When reduced to powder it is dark brown; it cuts glass; its density is 4.75, and it is strongly magnetic. It will not melt under the blow-pipe, and when heated in a platinum crucible it does not perceptibly lose weight. When fused with borax it dissolves entirely, and produces a greenish yellow glass. It is insoluble in nitric acid; hydrochloric acid will dissolve it slowly with a slight evolution of chlorine. By analysis, oxide of iron is precipitated, and the remaining liquid contains protoxide of manganese and magnesia.

Death of Professor Graham.—Thomas Graham, the master of the mint, and the discoverer of hydrogenium, is dead. Some of the most important steps in chemical progress are due to Professor Graham. The law of the diffusion of gases, the diffusion of liquids, and dialysis, were discovered by him. He was elected a Fellow of the Royal Society in 1836, and a corresponding member of the Academy of Sciences of the Institute of France in 1848. In 1855 he was created an honorary D. C. L., by Oxford University.

REVIEW OF THE FAIR.

Classification of Articles.

CLASS V.

SEC. 2—MILITARY ENGINEERING, ETC.

[CONTINUED.]

Hallidie's suspension bridge, the light structure between the two galleries, has features of originality and merit, which are well expressed in the following summary from the *Spirit of the Times:*

"Various contrivances have been invented and applied, from time to time, to overcome the flexibility of the cables and roadway of suspension bridges, and to negative or prevent that undulating motion so dangerous to the stability of the structure and so detrimental to the traffic over it.

Dredge's system of suspending bars tangent to the curve proposed to effect this, and many bridges were erected on this plan; but it possessed the fatal fault of too many independent points of suspension, which, in practice, proved to be its weakness.

Roebling has secured considerable rigidity at Niagara by an immense timber truss eighteen feet deep, which a heavy goods train only depresses about four inches, and which would be sufficient for all purposes, if it were not for the expansion and contraction of the cables, which destroys, to a considerable extent, the useful effect of the truss.

One can readily understand the difficulties to be met with in effecting rigidity in a suspended roadway that will hold good under all variations of temperature and consequent recurring elevation and depression of the curve of the bridge cables, or chains, from contraction or expansion, which difficulty, we believe, has never until now been successfully overcome. This is the most important, although not the only feature, in Mr. Hallidie's invention, and is one which he claims to have successfully accomplished. We accord to him the full benefit of his claims, remembering that he has been engaged for many years in the construction of bridges, and that the solving of this knotty problem has had the benefit of his practical experience and observation.

It is by means of these converging rods, in connection with the arrangement of the chains and cables together, with the lateral girders, that the inventor claims to secure a rigid bridge, as perfectly rigid as it is possible to make a suspension bridge, and a bridge in every way adapted for long spans and railroad travel—combining simplicity of construction with economy of material. This bridge has received the highest commendation of European bridge architects, as well as from Roebling himself."

Wire Rope.

Wire ropes constitute the specialty of Mr. Hallidie's establishment. To apprehend the extent of this field in modern times, one must reflect to what extended uses iron wire is brought. Standing rigging for ships, and the running gear of the mines are found to be more economical, because more durable and safe, made of iron wire than of hemp. Even for light flexible wheel and pulley connections, the brass wire twine, or the silver-like alloy exhibited by Mr. Hallidie, are much used, and liked for their durability and perfect adjustability without stretching. Metallic ropes from one inch in diameter to the smallest cords, are to be seen in coils and on reels in this space. They constitute the engineer's substitute for clumsy chains, and might be used a hundred fold more to advantage by people who have not yet learned to know their comparative cheapness and strength. The large ropes are made with convenient eyes at the ends, and may be spliced, in a peculiar manner.

Hemp Rope.

The hemp rope exhibition of Tubbs & Co., is as unpretending and as substantial as that of Mr. Hallidie. A pile of coils about ten feet high shows from the largest up to the smallest size. Hemp rope manufacturing in San Francisco is an extensive and profitable industry, the works at the Potrero being on a par with our largest manufacturing undertakings, in every respect. Chinese labor and immense quantities of the best running machinery, enable the establishment to furnish the Pacific Coast with rope by the ton, at reasonable prices.

SECTION 3.—CIVIL ENGINEERING AND ARCHITECTURE.

Drain and Water Pipes.

Drain and water pipes are on exhibition, representing three establishments—the Asphaltolin Company, Mr. Martin's at North Beach, and Mr. Clark's at Sacramento—whose products all differ. The asphaltolin pipe is a new invention, an original and most excellent idea brought into profitable use. Hemp cloth is wound around the molding stick and tarred with asphaltum. The pipe is exceedingly light and strong, withstands a great internal pressure, is durable against acid and alkaline waters, and last, not least, is cheap. A large job of asphaltolin pipe, laid some time since in Sonoma County, has proved to all who have examined it the superior merits of the article. Martin's pipe is a clay cement, which packs well, and has the appearance of being a very perfect article of its kind. It is shaped into all kinds of curves, having proper joinings, and even into circles, with ease. Clark's pipe is of pottery, and is a well baked stone ware, having overlapping joints of the old fashioned sort.

Brick.

Pressed brick, of fine appearance in the wall, are exhibited by J. P. Clay, but by what process made, or in what respect they are claimed to be superior, does not appear. They are good brick, looking as brilliant in their peculiar red as if they had been oiled—which, however, may have been the case. The Sacramento fire brick of M. Clark & Co. resembles English fire brick, and is made of a mixture of brick clay and steatite, materials abounding round the embouchures of the foothills in Sacramento and Amador counties. Tests, the results of which are exhibited, show that on the score of excellence the imported English is not ahead; so that the supply of the market is only a matter of underselling. Cheap home-made fire brick of a merited good reputation would soon meet with considerable demand, as smelting and roasting establishments are everywhere multiplying.

Earthquake-Proof Building

Should have received a large amount of attention at the present Fair. The Earthquake Committee of the Chamber of Commerce ought to have placed on exhibition some of the models and plans submitted to them, for they belong properly to the mechanics; and in the Mechanics' Institute Fair or library they would only become the mechanics' public property, where some attention would be likely to be paid to them.

Amongst all the earthquake-safety designs that necessity has called forth, not a few of which builders have begun to put in practice, we see represented at the Fair only Mr. Portois' patent earthquake and fire-proof chimney, and the same inventor's earthquake-proof brick. The former consists of a wooden framing, or box shell, of the size, shape and appearance of an ordinary chimney. Inside of this is a common stove-pipe packed with cement—both earthquake and fire-proof. Portois' brick is a common brick molded with two little holes or indentations on each side to receive pins.

Architectural Varieties.

Roofing slate is placed under this head, and a fine display by E. N. Robinson, of the California Slate Company, is one of the good and novel features of the Fair. Slate quarries in the East and in Europe, furnishing a good material adjacent to market, are worth their hundreds of thousands; and Mr. Robinson has proceeded logically and correctly in developing with energy this new industry on the Pacific coast. Brick we must have — and slate is equally indispensable, architecturally as well as from fire. There are about three dozen cases of slate in marketable packages of one by two feet dimensions, all mined near Copperopolis, in Calaveras County, several packages being from Dr. Holden's mine. This slate is clear of pyrites; which, unless we are at fault, is rare even in that region, and implies much sorting. But the specimens exhibited in considerable quantity are perfect, taking nails with less liability to split or break than any kind of wood, and as thickly as they can be driven, or about one nail to every square inch, in a slab that is to be seen leaning against one of the boxes.

Freeman's stair work, consisting of rails, posts, and balusters, makes a fine exhibition, architecturally,—stair work concentrating all art in architecture.

Light and Darkness.

An article of importance which we were unable to find is set down as "Lynch's improved reflector for cellars, vaults, etc." Daylight is as invaluable as it is cheap, but when men make of themselves worms, crawling through subterranean vaults and basements in the city, heaven's cheerful blessing will not follow unless we can artfully coax it after us into the darkness by some artificial means. The greatest skill or incompetence of an architect is, as a rule, displayed in that which he does for us with the light; because it is light, presented to us in its most favorable phase that gives cheerfulness and the natural conditions of happiness to the interior of our rooms and dwellings. Architects fall sadly short in these matters—indeed, one must be one's own architect to have them attended to at all. We doubt not but that a great deal might be done by the use of reflectors.

Wood Preserving.

Neither of the two wood-preserving establishments in this city—the Samuels sulphate of copper, and I. C. Wood's creosote or oil tar processes—have met with the full measure of success that their merits undoubtedly warrant in our timberless valleys and toredo-infested harbors. Only the oil tar process is represented at the Fair—by a table made of treated wood, and some samples of street pavement and piles, both of which have been tested—against enduring heat at 120° in one of the sugar refineries, and against the toredo, with highly satisfactory results. If it is any object to speculators in improvements to have their work last twenty or thirty years in the place of five, they will find it exceedingly economical to undergo the preservation treatment. The usual intention is to sell out before five years expire. Chemically these processes are founded in fact—in the unaccountable and explainable facts of organic chemistry, which tell us that both creosote and sulphate of copper have the quality to render the juicy parts of the woody fiber less soluble and liable to the influences of air and moisture, operating like antiseptics.

Another wood preserving or seasoning process by pressure, to prevent contraction and cracking, is represented by some specimens on the counter opposite to the Fair Press, showing that a hole bored along the grain can be made so as not to shrink in the severest test of kiln drying.

Marble and Marbelized Slate.

J. Daniel exhibits some nicely worked California and Roman marble mantles, and the California Slate Company have just brought in a novelty in what is denominated "marbleized slate." They take certain qualities of slate found in their quarries and shape it into mantles, billiard table plates, or other articles of utility or ornament, and afterwards subject it to a hardening process, which increases its tenacity and improves its appearance decidedly.

CLASS VI.

PHILOSOPHICAL, SURGICAL AND DENTAL INSTRUMENTS.

Mr. Roach's case of mathematical and surveying instruments contains specimens of the best theodolite, transit and levelling instruments that are made, besides other instruments, such as the cistern barometer, the camera lucida, etc. While adapting these instruments to the requirements of the country, or the preference of its engineers, Mr. Roach has, in the few articles exhibited, done work which is equal to that of the finest of the renowned makers of Philadelphia and Troy, or of Europe; since European engineering with all its thoroughness, falls short of the American in the handiness and completeness of the common working instruments used. The solar compass, of which Mr. Roach exhibited a superb specimen last year that drew a premium, is scarcely known amongst European engineers of the highest reputation. We have new counties and State boundaries to survey, and need instruments wherewith we can go straight to the mark with the fewest number of men; such as will do either for approximate or for thorough work. We got rid of many of the complications of European makers, which, it must be admitted, are often very good for special works. As to price, a set of working instruments of any kind can be obtained in Europe for half the American prices, to which must be added a duty that will bring the cost nearly to an equal figure. A good working engineer will look to it, however, that the instrument shall be to his suiting, at any price.

Roach casts extra variation plates for his transit and theodolites, whereby the needle may be used occasionally, precisely as in the ordinary compass, or the variation incidentally noted—an exceedingly practical appliance for this country, which for some reason, probably mechanical, is generally omitted in instruments of the kind. The graduation in these instruments is right and left to 90°, while in European instruments it is to 360°, contrary to the hands of the clock. They are of brass, covered with a dark bronze to prevent tarnishing.

Miscellaneous.

A "heliotellus" and "lunatellus" (orreries) are shown by Bancroft & Co., and a terrestrial globe by Holt. The former are a Philadelphia invention, and are new in revolving in a vertical plane.

The standard scale men—Fairbanks and Howe—are in the field through their agents, Hutchinson and Parkhurst, each with a dozen standard and counter scales, and equally patronized, by the feminine palpabilities, especially, of the Fair and their beaux.

Amongst other novelties, the movements of the Elgin watch, as made by machinery, dissected and placed on cards, are laid open to our inspection. Phillips's portable blowpipe assaying apparatus has already been described by us, the principle being that of a combination of four blowpipe flames on an assay of nearly or quite the crucible size; but having also an arrangement which enables the inexperienced and short-winded to recover their breath. With great ingenuity all is made to go into a very small space, including the necessary blowpipe fluxes and reagents.

Surgical and Dental.

The surgical and dental instruments shown include several original things. The trusses of Drs. Mahon & Folleau have an arrangement by which the pad fitting into the aperture is easily made small or large, to adapt it to the feeling of the patient; and there is an improvement on the artificial leg, whereby the clumsy upper part fitting around the thigh, often heating it disagreeably, can be much better dispensed with. Dr. Braun has also a case of trusses, in which we notice a peculiar pad with a spring attachment.

Mrs. M. A. Saydam shows three "patent cornea restorers." As age grows, there is a tendency in the cornea to sink into the watery fluids of the eye; and this is an invention to bring it back mechanically. A rubber appliance is placed like a cup over the eye, and by a gentle motion, the air in the interior is exhausted. This sucks the entire parts exposed outwards, but is supposed to have most influence upon those that should come naturally.

A curious dental appliance is that of Dr. Belle, for extracting teeth. It is a red tank in which a freezing mixture is prepared, and placed in such a manner that the Doctor is enabled almost instantaneously to freeze, or rather to benumb, the gums and nerves of the patient, so that, theoretically, he feels no pain.

Telegraphic Instruments.

Telegraphic instruments are shown by the two business colleges, and by Lundberg & Marwedel, manufacturing telegraphists, but there is nothing new or original that we discover, except Land's electrical tension balance, the rest of Lundberg & Marwedel's case being filled up with registers, sounders and relays of the various forms in use. The business colleges both use Morse instruments.

CLASS VII.

MANUFACTURES IN METALS.

This class comprises a large variety of articles, such as tools, stoves, and all the various products of iron, brass, lead and copper. The articles are numerous and scattered; but in our review we have endeavored, as far as practicable, to group them together for the convenience of reference.

THE PACIFIC ROLLING MILL.

The first in importance, perhaps, in this department, should be mentioned the display of the Pacific Rolling Mill Company. They exhibit hammered and rolled shafting, round, flat and merchant iron, hand iron, street railroad iron, horseshoe shapes, railroad axles and spikes, machine and log bolts, etc., all the products of their own works. These works have been erected, regardless of expense, so far as was necessary to provide the best of machinery, and to meet, to the fullest extent, the wants of the Pacific Coast, in their line of manufacture. The establishment of these works forms one of the most important steps of progress in the history of manufacturing enterprises in California.

SAN FRANCISCO LEAD AND SHOT WORKS.

Next in importance may be mentioned the display of T. H. Selby & Co., of the San Francisco Lead Works. This company has spared no expense or labor in providing the best and most approved class of machinery for their works, in the erection of which they have kept in view the future as well as the present wants of the Pacific Coast. They exhibit pig lead, lead and tin pipe, drop shot and lead ore. Sheet lead is manufactured by this company of any shape desired, thus enabling the purchaser to calculate closely upon cutting for use, so as to lose but a very

small quantity. Their extra shot is pronounced, by experienced sportsmen, to be superior to the best imported. This institution being a California entarprise, the managers have taken great pride in rendering it aecond to none in the world.

Tbe display of tin ore, pig tin, sheet tin and tin ware from the San Jacinto Tin Mines of California, forms another most important and auggestive exhibit, the value of wbich cannot be too highly estimated, and presents the germ of wbat may soon become a business of national importance. We have already in a previous issue spoken quite fully of this interesting exhibit.

The Pacific Saw Manufacturing Co., of this city, makes a splendid exhibit of everything belonging to their specialty, which has already been fully noticed in the Press. Mr. N. W. Spaulding, a membar of this company, and tbe inventor of the saw tooth wbich bears bis name, makes an exhibit of the sama. These teeth have now come into very general use, both in Califbrnia and the Atlautic States. The American Saw Company exhibit samples of moveable teeth, and perforated and solid saws. The specialty of the saws of tbis Company consists in punching holes bebind the teeth, for the purpose of simplifying the process of filing, and for the more ready removal of the aaw dust while in the act of cutting lumber.

The San Francisco Screw and Bolt Works, Phelps Bros., exhibit several boxes of their manufacture from their establishment, Nos. 13 and 15 Drumm street. This company turns out none hut first class goods ; they use the best refined iron for tbeir works, and tbeir present macbinery has a capacity for about 4,000 bolts per day. This is an important branch of mechanical industry, and deserves well of the public.

Safes.

In the line of safes, Mr. Jona. Kittredge, of 18 Fremont street, makes a most imposing display. The beholder can form but a very faint idea of the merits aud vast amount of genius and labor hestowed upon these massive constructious until he sees them opened and inspects their interior intricacies. These safes are represented as being positively burglar-proof, and as near fire-proof as they can be made. The locks are massive, and made with all the cunning of tbe most ingenious locksmith. The fact that they are of California manufacture adds still further interest to the display.

The only othar exhibit in this line is the single show of a Pacific safe, with improved lock bolts, from the establishmant of Kittredge & Leavitt, 225 and 227 Beale street, upon which is placed one of Wm. C. Bussey's California keyless locks, burglar and powder proof, and said to be the best combination lock in the world. These locks are made at the establishment of Kittredge & Leavitt.

Brass Work, Etc.

Mr. W. T. Garratt makes his usually extensive display of brass work, all from his foundry corner of Mission and Fremont streets. His collection always forms a conspicuous feature in the exhibitions of the Institute, and comprises a most beautiful and extensive assortment of articles in his line, such as churcb, steamboat, hotel and alarm bells, steam gauges, nozzels, pipes, faucets, etc. His exhibit is located just to the right of the entrance to the Art Gallery from the machinery department.

Gallagher, Weed & Co. also make a fine exhibit in, this line, of whistles, gongs, hose pipes, couplings, nozzles, gas cocks, etc., all of their own manufacture, and all of excellant workmanship and finish. Their case may be seen on tbe north wall of the machinery department. Messrs. Garvey & Kimhall make a fine exhibit of steamboat and house bells, pulls, hnobs, etc.; Will & Finck exbibit two hotel enunciators.

Wire Works, Etc.

A prominent and beautiful feature is the extensive exbibition of wire works made by H. T. Graves, every article of which is from their factory in this city. Their sliding window screens are really beautiful, and are admired by thousands for their ornamental as well as useful qualities. They may be aeen nearly opposite the Daily Fair Press atand, on the machinery side of tbe hall. He exhibits a wire summer house of sufficient siza to accommodata a large party, cbairs and lounges with ateel spring seats; alao bird cagea, dummies and an innumerable list of useful articlea in his line of trade. Mr. Graves also exhibits Cramer's Patent Combined Door Plate and Letter Box, a convenient and most uaeful inventiou. Joshua Gray exhibits samples of broom, piauo, solder, and hook and eye wire, plated and plain, all from his manufactory on Brannau street, uear Third.

Stoves and Cooking Apparatus.

There are a great number of cooking stoves on exhibition, with various and sundry contrivances appertaining thereto. Perbapa the finest exhibit in this line is made by Brittan, Holbrook & Co., who exhibit several of the "Peerless" cooking stovea, which present several new and very desirable features. They also exhibit stove fixturea of copper and tin, also tinware, and a lot of elegant Japanese ware. E. Ayers exhibits two of the improved American Hot Air Stoves, which have attained great popularity at the East, and which are fast finding their way into the kitchens of California; also several of smaller size, and a parlor stove. Scbuester Bros. exhibit Richmond's Portable Range; also the Union Range of tbe Barstow Stove Company, of Providence, each of which, it is claimed, possess numerous and important advantages. John Bohn exhibits three of the celebrated Model Cook Stoves, with fixtures. Jobn B. Owens, several coal oil stoves and heaters, in which the heat is generated by kerosene; also various other usefnl articles for tba nursery, etc. George Reuben exbibits samples of patent saucepau covers. Mr. Bullard exhibits Perbam's stovepipa extension shelves, a new and very convenient article of stove furniture, which we bave already noticed at length. William Jones, of Butta County, exbibits on the Mining and Scientific Press counter, steam pressure culinary vessels. A. C. Taylor exhibits his patent slop-hoppers, with patent traps, patent iron sinks, coffeepots and dish-pans, all of his invention. August David exhibits two ice cream freezers, of novel and most serviceable construction; the Standard Soap Company, a submerged coffee pot.

Tools, Etc.

Among the tools we notice a case o highly finished twist drills, ateel squares, etc., exhibited hy Chas. Otto; two pairs of wire cutters, by Henry Axtell, illustrated in our edition of Sept. 23d; Mathew Cook exhibits the "Little Giant" blasting wedge, which, after being driven into a log, contains a cbamber into which powder may be charged, fuse attached, and the charge secured by a set-screw, without tamping; P. Riley exhibits two pair of gas-pipe tongs, presenting au ingenious and most effective combination of parts for grasping and holding work; Messrs. Kindleberger & Arnold show their reversihle loose joint butts, which we have already fully described; an instrument combining a stove handle and other household tools is exhibited by F. B. Lamb; David Stoddard exhibits in this department six English ratcbet bracas aud five turning tools.

J. H. Culver, tbe accommodating entry clerk, exhibits an improved construction of calipers, by which tbe internal as well as the external diameter of a hollow globe witb only a small opening, may be readily measured, also other irregular surfaces, wbich cannot be reached for measurement hy the calipers iu ordinary use—tbe improvement consists in constructing a moveable joint on one of the lags. Machiuists will do well to take a look at tbis instrument Mr. K. Vail exhibits four irou planers—Palmer's patent; Currier & Howard exhibit Howard's improved mitering machine.

Miscellaneous Exhibits.

Among the miscellaneous exhibits we notice a fancy shoeing hammer, and a large tuning fork, by Morgan Gale, on exhibition in the M. & S. Press case; a combined carpenter's tool, by John Nestor, of Portland; samples of California-manufactured horseshoes, by Misgill & Cooper; a combination lock of California manufacture, patented through the M. & S. Press Agency, by Ephraim Vorbe; chopping knives, by E. T. Houghton, also automatic clothes washers and boilers; combinad latch and lock, by John McLeod; M. Price, cutlery; case of molding tools, by Carl Hinz; J. C. Hammond exbibits samples of I X L metal for friction bearings and journal boxes, a new metallic alloy recently patented through the Mining and Scientific Press Patent Agency; R. F. Osborne, a case of cabinet hardware, another of carriage hardware, and one of tools; two fire ligbtera, by Jacob Wbitney; a large assortment of lanterns of various patterns, by A. L. Stemson, of Cbicago; case of brass and plated goods, of California manufacture, by Charles Otto; tbe Risdon Iron Worka exhibit four car wheels of their own manufacture; Root & Nye make a very fine exbibit of chandeliers, in blue, gold and gilt, and in Euglisb, French, Egyptian, aud Flemish styles; also gothic standards, marble ornaments, bronze figures, etc.; Cassin & Proctor exhibit a funnel—patent applied for; C. H. Foster exhibits a substitute for brass hinges, a valuable invention, which we shall notice at length hereafter.

CLASS VIII.

Wood and its Manufactures.

It is satisfactory to know that we are progressing in our knowledge of application of the capabilities of the woods of this coast. We have just fonnd out that there is a boundless supply of splendid ship building timher—tbe north coast pine and Alaska cedar, the best material in the world, and to be had at the water's edge. The evergreen Oakland, Napa and Russian River oak *(Quercus agrifolia)* and the Clear Lake, Santa Rosa and San Jose White Oak *(Q. Garryana)* furnish first rate articlea for casks, and the latter for ship knees,—so that within a year or two all the cooper shops, wine cellars, and liquor stores in the city bave been filled with bright new, solid, and often very large sized casks made of them, by thousands, to the justly meritad profit of those who have sought out and utilized their merits for the market. Laurel is more beautiful than the rich woods of Honduras and Brazil, as we all know who have seen Strahle & Hughes' palace, or the exhibitions of Boyd and Thayer of last year. We have not yet begun to know the value of all we possess in this department of our resources. The koa wood of the Sandwich Islands is represented by a piece leaning against Strahle & Hugbes' palace ; it should command the prices of mabogany and rosewood, and undoubtedly would in the European market. Everything in the wood line is now made by ourselves, except fine or wholesale furniture, soma casks, and the hard and tough wagon manufactures, the wood for wbich is to a large extent imported in bulk and worked up on this coast. Oregon maple keeps company with laurel for certain purposes, but is not equal in its fineness of natural color and grain, nor in its capability for staining in imitation of any otber of the precious woods most fancied. The birch, ash, and oak forests that were to have bean discovered iu Alaska, do not exist ; but the best kind of cedar does, in quantity. Of our own woods, those most used for cabinet work are laurel, sugar and Oregon pine, Spanish and white cedar, and redwood ; for wooden ware such as buckets, pine and redwood ; for powder kegs, pine witb native hazel hoops ; for the larger and coarser kinds of engravings, laurel and pine ; for railroad cars, ties, and bridge timbers, piue and redwood.

As we are wanting in tough and elastic woods for manufacturing on this coast, the following table of woods according to tbeir qualities and uses will be found valuable in this connection :

Qualities.

Elasticity.—Ash, hazel, hickory, chestnut, yew.

Elasticity and Firmness.—Beech, elm, lignum vitæ, oak, walnut.

Even grain (for carving and engraving).—Pear, pine, box, lime, laurel.

Durability (in dry works).—Cedar, oak, poplar, yellow pine, chestnut, redwood.

Coloring Matters.—Red: Brazil logwood, Nicaragua, etc. *Green:* Green ebony. *Yellow:* Fustic, zanta.

Scent.—Camphor, cedar, rosewood, sandal, satin wood, sassafras.

Uses.

Building: Ships.—Cedars, pines, (deals) firs, larches, elm, oaks, locnst, teak, Oregon pine, white and Alaska cedar. *Wet construction, as piles, flumes, etc.;* Elm, aldar, beecb, oak, white cedar, and California spruce.

House Carpentering.—Pines, oaks, whitewood, chestnut, asb, spruce, aycamore, Oregon pine, sugar pine and redwood.

Machinery and Mill Work—Frames : Ash, beech, birch, pines, elm, Oregon pine, mahogany, oak. *Rollers, etc.:* Box lignum vitæ, California white oak and live oak, mabogany. *Teeth of Wheels :* Crab tree, locust. *Foundry Patterns:* Alder, Eastern pines, Oregon pine. mahogany.

Furniture, Common: Beech, birch, cedars, cherry, pines, white wood—everything. *Best :* Ebony, cherry, mahogany, maple, oak, rose, satiu, sandal, chestnut, cedar, walnut, laurel.

Tbere is no general collection of woods at tbe Fair, such as any of our wood or lumber dealers might have gotten up with very little trouble. A full botanical description of tbe California woods is given in Cronise's Natural Wealth of California.

Veneering.

Strahle & Hughes' billiard exhibition embraces only laurel for veneering, but is such a display in that line as is seldom made, to advertise the beauty and merits of any one kind of wood. Korbel & Co., of South Park Saw Mill on Brannan atreet, and Ludolph's mill near Russian River, did tha sawing, the results baing wonderfully thin,—of the appearance of pasteboard, and pasted upon otber wood like paper, so tbat tbe existence even of the veneering is not likely to he discovered. George A. Brush exhibits some very perfect imitation laurel made of pine. J. C. Thayer sbows tbe size of some of our laurel trees by exbibiting in front of the Pavilion a stick of timber 48 feet long and 28x28 inches tbick.

In miscellaneous wooden manufactures Elam & Howes' factory takes the lead, the exhibition consisting of a fine display of baskets, tubs, wash boards, refrigerators, cheese boxes, cburns, powder kegs, etc. Such factoriea shonld come into existence in the foot hills, on the line of the railroad, where there ia water power. At Truckee one of the saw mills has already developed into a planing and manufacturing mill ; but wooden manufactures should be local to supply local demands.

Barrels and Casks

Of Russian River oak, looking very anbatantial, are exbibited by F. M. Arnold, and by Fulda & Co. of the California Wine Cooperage Co., the latter astablishment being represented by a 4,265 gallon cask about 12 feet in diameter,—a relative of the great *tonne* of Heidelberg, which is about 30 feet in diametar. Fulda is the inventor of a very fine stave-edging machine, with which the work on this cask can he done in three honrs, while by band labor it would require two and a half days.

Brushes and Brooms.

In brush manufacturing, Figer Brothers take tha lead, exbibiting two dozen kinds of brushes, for every conceivable purpose, from imported bristlcs we presume ; amongst them, a "sluice hrush," for sluice concentration, wbicb is not a bad method for the aeparation of fine mineral substances hy their specific gravity. Brooms, from the factory of S. P. Taylor (the paper manufacturer), are shown in all sizes, and of such quality as to supersede imported articles of tbe kind, It ia needless to remark that an articla of snch large consumption can ba manufactured to great advantage in California. Gilroy, Folsom, and places adjacent to the corn-fields, are able to compete, however, with the city mannfactories.

Ornamentation.

The pyrographic wood in the art gallery, exhibited by Blyth & Wetberbee, suggests a new field for ornamentation in wood manufactures. Designs are burned into wood with beautiful effect. A similar specialty is that of carved hureau bandlea and the like, as ahown in R. F. Osborn's case of cabinet hardware. Art in homely surroundings is thus becoming cheaper and cheaper, and taste, rather than fortune, may beautify every man'a home.

Willow Work, Eto.

Overland lunch baskets, scrap baskets, chairs, cradles, etc., ia rapresented in a fine exhibition from Hall'a Pacific Willow Works. Coleman'a Union Boot-jack, and otber like small articles, too numcrous to mention, completes our list under this head down to

Washing Machines.

Of these the nnmber is always large at a Fair ; and to the newspaper critic the journey amongst them is like voyaging hetwean Scylla and Charybdia. They are all good, and all the best. Tbe newest one is a California invention, by Frank Buckalew, consisting of a vertical wheel with arms, to tbe ends of whicb the clothes are attached. Tbe wheel being turned, the clotbes are rinaed in water and taken out in rapid succession. Witb soap, and some slight friction against the walls and top of the box, all impurities are made to disengage themselves tbat can he done without rubbing. The specialty of Buckalew's machine is tbat it professes to do wrist-bands and bosoms successfully. Messrs. Lamb (the Novelty), Hollister, Lewis, Hawley (the Union), Whitney (the Isabella), Stockton and Mrs. Waldrin, also exhibit machines, wbich may be aeen in operation, and are not aatisfactorily to be appreciated without.

In His Cups.—A man employed as a packer in a crockery atore on Sansome street feli into a basket of China cups, yesterday, and hroke about four dozen.

Spicy.—Strong Pepper (wbite) has been appointed postmaster at Pepperville, Nebraska. All spice appears to he mustard in that office.

Put him out is what everybody said tbe other day when poor Tom Bibbin's spontaneously combusted. Tbey put him in—the grave, because they could not put him out.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Cons., Sierra co., Sept. 24, 80c	Oct. 25	Nov. 15*
American, Storey co., Sept. 15, $1 50	Oct. 19	Nov. 4
Black Jacket, White Pine, Aug. 18, 10c	Sept. 17	Oct. 21
Bucklin, White Pine, Sept. 20, 10c	Oct. 6	Nov. 25*
Bullion, Storey co., Nev., Aug. 21, $10	Pay. immediately.	
Cala. Slate, Calaveras co., Sept. 7, $1	Oct. 7	Oct. 20
Cons. Virginia, Storey co., Oct. 1, $1 50	Nov. 4	Nov. 20
Coney, Amador co., Oct. 14, $5	Nov. 20	Dec. 13
Cherokee Flat, Butte co., Sept. 3, $1	Oct. 6	Oct. 21
Etna, White Pine, Aug. 27, 15c	Sept. 30	Oct. 20
Evening Star No. 1, White Pine, Aug. 25, 10c	Oct. 2	Oct. 22*
Empire N. & M. Co., Sept. 20, $25	Nov. 4	Nov. 24
Featherstone, White Pine, Aug. 31, 30c	Oct. 4	Oct. 26
Chloride Flat Cons., W. P., Sept. 16, $1	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c	Oct. 18	Nov. 6
Hearst, White Pine, Sept. 15, 50c	Nov. 1	Nov. 22
Hope Gravel, Nevada co., Sept. 20, $1	Oct. 25	Nov. 15
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
Maxwell, Amador co., Sept. 22, $1	Nov. 1	Nov. 24
Metropolitan, White Pine, Sept. 11, $2.50	Oct. 13	Nov. 3
Morning Star, Alpine co., $1.50	Nov. 15	Dec. 6
North Bloomfield, Nevada co., Sept. 20, $5	Oct. 22	Nov. 8
Nonpareil, White Pine, Oct. 1, 30c	Nov. 18	Dec. 9
North Americ'n Cons., W. P., Sept. 27, 25c	Nov. 1	Nov. 22*
Orig. Hid. Treasure, White Pine, Aug. 8, $2	Oct. 4	Oct. 21
Pinto, White Pine, Aug. 18	Sale Nov. 11	
Rindon, Alpine co., Sept. 16, 25c	Oct. 20	Nov. 6*
Ratnburn, White Pine, Aug. 27, 50c	Oct. 1	Oct. 21
Siempre Viva, Mexico, Sept. 17, $1.50	Oct. 21	Nov. 8*
Silver Wave, White Pine, Aug. 28, 20c	Sept. 28	Oct. 20*
San Jacinto, Tin, San Bernardino co., Aug. 20, $2	Oct 4	Oct 18
Senator, Storey co., Nev., Sept 6, 50c	Oct. 18	Nov. 8
Sierra, Douglass co., Nev., Aug. 20, $2	Sept. 23	Oct. 14
San Joaquin & K. & C. Co., Oct. 5, 10c	Nov. 8	Nov. 23
Taylor, El Dorado co., Sept. 25, 25c	Oct. 4	Oct. 20
Thunderbolt, White Pine, Sept. 14, 50c	Oct. 18	Nov. 6
Tecumseh, Calaveras co., $5	Nov. 17	Dec. 8
U. S. Grant, Nevada co., Sept. 21, 50c	Oct. 22	Nov. 13*
White Pine Mutual, Sept. 29, 50c	Nov. 3	Nov. 22
Wells, White Pine, Aug. 10, 30c	Sept. 17	Nov. 4*
Wheeler, Esmeralda co., Sept. 20, $1	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

Coney	Meeting Oct. 19
Eureka	Annual Meeting Oct 21
Exchequer	Annual Meeting, Oct. 18
Green Monster	Meeting Oct. 18
Gold Hill Cons.	Meeting Oct. 20
Gleenwood	Oct. Annual Meeting Oct. 27
Indian Valley	Annual Meeting, Oct. 19
Mineral City, White Pine, Aug. 24, 50c	Oct. 7—Oct. 22
Washtello	Adjourned Meeting Oct. 18*

LATEST DIVIDENDS.

Amador Co., div. $6 per share	Payable October 7, 1869
Alpha Cons., Storey co., Nev., div. $2	Pay. June 19, 1868
Bacon, Storey co., Nev., div.	Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12, 1868
Chollar-Potosi, div., $3	Payable October 5, 1869
Eureka, div. $7 50	Payable October 8, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q. M. & M., dividend, $7 50	Payable Jan. 15, 1868
Golden Chariot, Idaho, div. $3	Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c per sh	Pay. Oct. 26, 1868
Hale & Norcross, div. $6	Payable July 10, 1869
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Jadusa, White Pine, div., $1	Payable July 1, 1869
Keystone, Sierra co., div., $32	Payable May 6, 1869
Kentuck, div., $20 per share	Payable Jan. 10, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Assessable, div.	Payable June 18, 1868
Sand Spring Salt, dividend $1	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec. 19, 1868
Savage, Virginia, Nev., dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct 10, 1869
Virginia & G. H. Water Co.	Dividend, payable April 16, 1869
Yellow Jacket, div., $5	Payable March 16, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD.

FRIDAY EVENING, October 15, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 6 20s, 1865, '67, '68	—	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	90	—
Legal Tender Notes	75¼	76¼
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & int.	
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	35	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par & int.	
San Francisco City and Co. Sch'l B'ds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	25	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1863	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	47½	50
State Telegraph Co	25	—
Spring Valley Water Co	—	63
GAS COMPANIES.		
San Francisco Gas Co	84	85
Sacramento Gas Co	52	64
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	69
Central Railroad	56	—
North Beach and Mission Railroad	67	68
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	36	100
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	600	620
California Insurance Co	—	1500
Union Insurance Co	95	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	90
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
Tha Bank of California	145	—
MINING STOCKS—WASHOE DISTRICT.		
Alpha	13	14
Baltimore American	—	—
Belcher	12	—
Bullion, G. H	—	15
Crown Point	11⅛	11¾
Cole (Va.)	—	⅞
Confidence	16	20
Consolidated Virginia	—	—
Chollar-Potosi	14½	15
Daney	—	1
Exchequer	6	6
Empire Mill and Mining Co	17	18
Gould & Curry	67	68
Gold Hill Quartz	25	27
Hale & Norcross	124	125
Imperial	28	29
Julia	—	1
Justice and Independent	—	⅛
Kentuck	162	162½
Lady Bryan	—	13
American	—	10
Occidental	—	10
Ophir	—	18
Overman	95	—
Segregated Belcher	5	6
Savage	45	45½
Sierra Nevada	12½	12¾
Union	—	—
United States	—	—
Yellow Jacket	38½	39
MISCELLANEOUS MINING STOCKS.		
Amador (California)	275	280
Aurora, White Pine	6	8
Eureka, (California)	220	225
Golden Chariot (Idaho)	15	18
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocotillo, White Pine	½	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, October 15, 1869.

Flour, Extra, ₱ bbl	$5 00	@$5 50
Do. Superfine	4 00	@ 4 50
Corn Meal, ₱ 100 lbs	2 00	@ 2 25
Wheat, ₱ 100 lbs	90	@ 1 55
Oats, ₱ 100 lbs	90	@ 1 50
Barley, ₱ 100 lbs	85	@ 1 15
Beans, ₱ 100 lbs	2 50	@ 3 50
Potatoes, ₱ 100 lbs	75	@ 1 50
Hay, ₱ ton	8 00	@15 00
Live Oak Wood, ₱ cord	9 00	@14 00
Beef, extra, dressed, ₱ lb	7	@ 10
Sheep, on foot	2 50	@ 3 00
Hogs, on foot, ₱ lb	5	@ 7
Hogs, dressed, ₱ lb	9	@ 10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@ 15
Do. China	10	@ 11
Coffee, Costa Rica, ₱ lb	18½	@ 19
Do. Rio	18½	@ 19
Tea, Japan, ₱ lb	75	@ 90
Do. Green	60	@ 1 25
Rice, Sandwich, ₱ lb	9½	@ 10
China Rice, ₱ lb	5½	@ 6
Coal Oil, ₱ gallon	64	@ 65
Candles, ₱ lb	16	@ 18
Ranch Butter, ₱ lb	50	@ 60
Isthmus Butter, ₱ lb	25	@ 37½
Cheese, California, ₱ lb	15	@ 18
Eggs, ₱ dozen	60	@ 65
Lard, ₱ lb	17	@ 18
Ham and Bacon, ₱ lb	17	@ 19
Shoulders, ₱ lb	10	@ 12

Retail Prices.

Butter, California, fresh, ₱ lb	60	@ 75
do. pickled, ₱ lb	35	@ 40
do. Oregon, ₱ lb	25	@ 30
do. New York, ₱ lb	35	@ 40
Cheese, ₱ lb	20	@ 25
Honey, ₱ lb	25	@ 30
Eggs, ₱ dozen	70	@ 76
Lard, ₱ lb	20	@ 22½
Hams and Bacon, ₱ lb	—	@ 25
Chamberlain's, ₱ gallon	1 00	@ 1 25
Potatoes, ₱ lb	2	@ 3
Potatoes, Sweet, ₱ lb	—	@ 2
Tomatoes, ₱ lb	2	@ 3
Onions, ₱ lb	2	@ 3
Apples, No. 1, ₱ lb	4	@ 6
Pears, Table, ₱ lb	5	@ —
Plums, dried, ₱ lb	10	@ 12
Peaches, dried, ₱ lb	10	@ 15
Oranges, ₱ dozen	50	@ 75
Lemons, ₱ dozen	—	@ 1 00
Chickens, apiece	75	@ 1 00
Turkeys, ₱ lb	25	@ 30
Eggs, Table and Co.	10	@ 12
Soap, Castile, ₱ lb	18	@ 20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, October 15, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1½c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2¾c ₱ lb.		
Scotch and English Pig Iron ₱ ton	$32 50	@$35 00
White Pig ₱ ton	30 00	@ 32 00
Refined Bar, bad assortment, ₱ lb	— 03	@ — —
Refined Bar, good assortment, ₱ lb	— 04	@ — —
Railer, No. 1 to 4	— 04¾	@ — —
Plate, No. 8 to 10	— 04¼	@ — 04¾
Sheet, No. 10 to 13	— 04¾	@ — 5
Sheet, No. 14 to 20	— 05	@ — 5¾
Sheet, No. 24 to 27	— 05	@ — 6¾
Corrug'd Duty: Sheathing, 3¾c ₱ lb; Pig and Bar, 2½c ₱ lb		
Sheathing, ₱ lb	— —	@ — 20
Sheathing, Yellow	— 20	@ — 21
Sheathing, Old Yellow	— 10	@ — 11
Composition Nails	— 21	@ — 22
Composition Bolts	— 21	@ — 22
TIN PLATES.—Duty: 25 ₱ cent. ad valorem.		
Plates, Charcoal, IX, ₱ box	12 00	@ — —
Plates, I C Charcoal	10 00	@10 50
Roofing Plates	10 00	@10 50
Banca Tin, Slabs, ₱ lb	— 40	@ — 42½
STEEL.—English Cast Steel, ₱ lb	— —	@ — 15
QUICKSILVER.—₱ lb	— 55	@ — 60
LEAD.—Pig, ₱ lb	— 7½	@ — 8
Sheet	— 10	@ — —
Pipe	— 11	@ — —
Bar	— 9	@ — 9
ZINC.—Sheets, ₱ lb	— 10½	@ — 11
BORAX.—California, ₱ lb	— 38	@ — 40

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Oct. 15, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

		Per ton.				Per ton
12	per cent. ore	$24 00	18	per cent. ore		$41 40
13	" "	26 65	19	" "		44 65
14	" "	29 40	20	" "		48 00
15	" "	32 25	25	" "		62 50
16	" "	25 20	30	" "		75 00
17	" "	38 25				

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

These prices, corrected by W. T. Atwood, we believe will be found substantially correct, and can be realized at this date.

ON A BUST.—Latest advices from Rome state that Miss Harriet Hosmer, the celebrated American sculptress, "is devoting all her abilities on a single bust." Some of the fast young gentlemen of San Francisco are less exclusive. They go on many.

A gentleman traveling on a steamer, one day at dinner, was making away with a large pudding close by, when he was told by a servant that it was dessert. "It matters not to me," said he, "I would eat it if it were a wilderness."

GAME of all kinds is scarce about San Francisco, except faro, euchre and poker.

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

WANTED.—To rent a house of about six rooms, in a healthy location, near the business center of the city, for a gentleman, wife and baby. Will purchase or rent the furniture. Address X, box 17, P. O. San Francisco.

PHOTOGRAPHY.—For CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.

10v18 6m B. F. HOWLAND.

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Use Pain Killer for Cholera and Bowel Complaints, for Bolt., Cuts, Bruises and Scalds, Old Sores, Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons,

Sore Throat, Sa en Colds, Congha, Etc.

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

A Family Medicine.—The PAIN KILLER is a purely vegetable compound, and while it is a most efficient remedy for pain, it is a perfectly safe medicine, even in the most unskilful hands. For Summer Complaints, or any other form of bowel disease in children or adults, it is an almost certain cure, and has, without doubt, been more successful in curing the various kinds of Cholera than any other known remedy, or the most skillful physician. In India, Africa and China, where this dreadful disease is more or less prevalent, the Pain Killer is considered by the natives, as well as European residents in those climates, a *sure cure.*

We have long known the high character of the PAIN KILLER, and that it is used with great success and satisfaction in our best families. It is the favorite medicine of our missionaries in heathen lands, where they use it more than all else together for the diseases that abound in those warm climates. It should be kept in every house, in readiness for sudden attacks of sickness.—*Chr. Press.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

KEOINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents

RETUARNED.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

New Mining Advertisements.

Glenwood Mill and Mining Company.—Location of Works: Greenwood, El Dorado County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of October, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the fifteenth (15th) day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the seventh (7th) day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco, Cal. ne15

Mining Notices—Continued.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of September, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. sep25

Bucklin Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of September, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 40 Merchants' Exchange, California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixth day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the twenty-sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. O'ELL STONE, Secretary.
Office, No. 40 Merchants' Exchange, California street, San Francisco. oct2

North America Consolidated Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty seventh day of September, 1869, an assessment of two and one-half cents (2½c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN ARMSTRONG, JR., Secretary.
Office, 302 Montgomery street, San Francisco. oct2

Rippon Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of September, 1869, an assessment of twenty-five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, N. E. corner of Fifth and Howard streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twentieth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. F. BERNABO, Secretary pro tem.
Office, northeast corner Fifth and Howard streets, San Francisco, California. sc25

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixth day of September, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 408 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the eighteenth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.
Office, 408 California street, San Francisco. sell

Siempre Viva Silver Mining Company, District of Zaragoza, Sinaloa, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of September, 1869, an assessment of one dollar and fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, 314 California street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the twenty-first day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the eighth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN F. LOHSE, Secretary.
Office, 314 California street, Up stairs, San Francisco, California sell

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment (No. 2) levied on the twenty-fifth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bisbop, T. B.	unissued	1000	$200 00
Coy, Frank	unissued	1000	200 00
Creighton, F.	2 to 11 inc-ea 100	1000	200 00
Gibb, W. T.	1	1000	200 00
Gibb, W. T.	unissued	1000	200 00

And in accordance with law, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salerooms of John Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, Cal. on Monday, the twenty-fifth day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

SAM'L S. MURFEY, Secretary.
Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. oe9

U. S. Grant Mining Company.—Location of Works: Carlisle, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of September, 1869, an assessment of fifty cents (50c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-sixth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the thirteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.
Office, No. 226 Clay street, San Francisco. oc2

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	6	bal 1 46
George S Porter	20	6	bal 1 46
George S Porter	3	268	bal 65 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	6	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	10	1258	bal 127 75
J H Williams	69	979	bal 92 21
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10	bal 1 50
W H Cox	43	6	1 50
Otis V Sawyer	45	20	6 00
Otis V Sawyer	46	20	6 00
R G B McOonough	48	100	bal 11 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	59	670	bal 67 00
J O Littlefield	61	630	bal 63 00
George H Russell	64	600	bal 153 12
S M Smith	74	200	bal 20 00
Samuel D Meyer	75	50	15 00
George B Merrill, Trustee	63	631	189 30
Otis V Sawyer	71	1200	bal 112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. RUSSELL, Secretary.
Office, No. 439 California street, San Francisco. sc25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc9 GEO. H. RUSSELL, Secretary.

Notice.—The adjourned Annual Meeting of the Stockholders of the WASHTELLO MINING COMPANY will be held on MONDAY, October 18th, 1869, at the office of J. F. Hubbard, Esq., Room No. 3, Hayward's Building, California street, at 8 o'clock P. M.

DANIEL McLEOD, Secretary.
San Francisco, Sept. 21, 1869. s ec25-2w

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Globe.—*Miner*, Oct. 2d: The Supt. is pnshing ahead the tunnel as fast as possible to be ready with the ore on the arrival of the mill, soon expected here. They are in ledge matter now, but being on the west side of the deposit the ore is not yet of paying quality.

The Clear Quill.—From pockets of ore struck in the M. C. Tunnel No. 3, yesterday, we saw samples washed out which gave fully 25 per cent. pure sulphurets. This would make the ore worth at least $500 per ton, as these Tarshish sulphurets assay $2,000 and over.

Imperial.—Twenty-six feet of tunnel made last week, and nearly as good headway making this. This will soon bring them to the Florence lode.

Sold.—*Chronicle*, 2d: Davidson's quartz and saw mills, near this town, have been sold to an English company for $20,000.

CALAVERAS COUNTY.

Mosquito Gulch.—*Chronicle*, Oct. 9th: We are informed that the principal quartz ledges in the vicinity have been purchased by a company of New York capitaliets. They have started a tunnel that will strike their leads at a depth of four hundred feet, and will sink a shaft to intersect it.

EL DORADO COUNTY.

U. S. Grant Mine.—Placerville *Democrat*, 9th: This is eight miles east of this city and half a mile north of the Carson road. The Supt. informs us that they have completed an eight-stamp mill, and will commence crushing this week. The lead prospects from $10 to $40 per ton. They are down on the lode 23 feet, and have run drifts each way.

NEVADA COUNTY.

Vigilance.—*Gazette*, Oct. 11th: We learn that a quartz mill, constructed in Philadelphia for the company, arrived a few days ago at San Francisco. It is constructed on a new principle, the steam acting directly on the stamps. The building for the mill is completed, and the machinery will be set up without delay.

Ophir Hill.—Grass Valley *National*, 7th: We learn that the Graves Bros. have raised 200 tons of rock, and are having it crushed at Smith's mill. They estimate that it will pay $30 per ton.

Mohawk.—*Transcript*, 8th: This company, on Gold Flat, has been incorporated. Another engine will be put up, so that one will be used for hoisting and one for pumping.

Eagle Company.—The Eagle Co. are owners of the California mine, near this city, and the Grizzly, in Eureka. Dr. Beach comes ont for the purpose of ascertaining the condition of his company's affairs. We are told that on both sides of the incline, in the California, there is a large amount of pay rock, which was in sight at the time orders were received to shut down.

Columbia Hill.—The Union Gravel Mining Co., in which Nichols & Woodsides are principal owners, are fitting up their claims for work, having made arrangements with the North Bloomfield Co. for water.

The Kansas.—Same of 10th: Since the removal of the machinery to the foot of the hill for the purpose of sinking upon the gravel channel, the shaft has been sunk to the depth of thirty feet, when the water became troublesome. A pump will be put up.

About to Start up.—The owners of the Coe mine are making arrangements to recommence work on their mine.

Eureka.—Grass Valley *Union*, 9th: This company declared a dividend of $7.50 per share for the month of September, aggregating $30,000, which was paid in San Francisco yesterday.

McClellan.—Same of 10th: The company is prospecting the work on this mine in the most vigorous manner, and have a shaft down on a ledge over one hundred feet, substantially timbered. The ledge is of good width and shows heavily in sulphurets, which carry well in gold. The owners feel highly encouraged with the prospects.

PLUMAS COUNTY.

Argentina.—Quincy *National*, Oct. 2d: Heath & Co. have finished their new flume half a mile in length, 3 ft. wide, 18 in. high, and paved with rock—that is, rocks are used in the place of blocks or riffles. The company expect to take out big pay.

Coleman.—We were presented this week with some rich rock from the Coleman ledge. As the tunnel progresses the rock improves, showing considerable free gold. Old quartz men have prospected the rock on the dump, and in the ledge, and unite in saying it will pay upwards of $100 a ton. M. Smith & Co. have struck the south extension, which they are going to develop.

Struck It.—Loring & Cummings have struck rich ground in the back channel of the old Gloyd claims, at Elizabethtown, two miles from this place.

SHASTA COUNTY.

South Fork.—*Courier*, Oct. 2d: San Francisco parties have agreed to erect a quartz mill at Ludwig's Ranch, provided the South Fork ledge owners will obligate themselves to donate a certain number of tons of quartz. It is thought that the proposition will be accepted.

Rich.—Same of 9th: Assays of rock taken to San Francisco from the new tunnel on the Washington claim, French Gulch, yielded over $700 to the ton in gold and silver. The quartz is not rated as first-class.

Spring Creek Ditch.—The proprietors have workmen cleaning it out and repairing the flumes.

SISKIYOU COUNTY.

Big Valley.—Yreka *Union*, Oct. 2d: We learn that there is not much excitement at Ash Creek about the new mines. Quartz ledges have been discovered. Gold in small quantities is found in the gulches in the vicinity of the ledges.

Oro Fino.—This once fast mining town is unprecedently dull. The water failed several weeks earlier than usual.

Large Nugget.—Same of 9th: Townsend & Co. took from their claim, on Scott Bar one day this week a nugget which weighed 16 ozs. The company had been working sometime without pay, and were thinking seriously of abandoning the claim.

TRINITY COUNTY.

Canon Creek.—Correspondent of *Journal*, Oct. 2d: There are some 60 miners on the creek, scattered along a distance of eight or nine miles. Above the town of Cañon City the claims appear to be located higher in the hills, the low bars and bed of the creek having evidently been worked years ago.

YUBA COUNTY.

Mining at Brown's Valley.—*Appeal*, 12th: The Dannibroge mill has now been running three weeks on quartz from the Norfolk ledge, which is located about 40 yards west of the mill. The ore crushed has paid expenses. The mine is opened to a depth of only 30 feet.

Arizona.

England Gulch.—Prescott *Miner*, Sept. 35: Iager & Rogers took out last week $66 with a rocker. One piece weighed $35, another $5, and another $4.

Upper Hassayampa.—Several miners are at work, but they keep mum about what they are doing. At present, but little placer mining is being done, owing to the scarcity of water.

Quartz.—Rock is being taken ont of several ledges in Walker's and Agua Frio Districts ...The Sterling is "laid up" until water comes....Messrs. Heslop, Hitchcock, Gray, Wnnderlich and others, have gone to Big Bug District with the intention of starting the mill, should there be sufficient water....Davis & Taylor have sold an interest in their mines, wheel and arastras, to the Jackson Bros. The company are takiug very rich rock out of the Astor lode.

Yellow Pine.—The Visalia *Delta* of Oct. 6th announces the arrival home of a party of prospectors from "Yellow Pine and Clarke Districts, Arizona," and adds that the facts in its possession show "that the richest and most extensive body of mineral ever yet discovered in this continent is open to the view of any who choose to journey thither." The route from Walker's Pass is given in full to the mines, 153 miles. The editor is tempted by the specimens exhibited, and is bound to go himself.

Colorado.

South Pass.—Central City *Register*, Sept. 30th: John Conuors says there are two or three lodes which are paying well, but predicts terribly hard times there this winter.

Items.—Mr. Bradley is running the full capacity of his mill—22 stamps—on custom ore....We saw yesterday a retort of 8½ ozs. of gold, the result of two cords surface quartz from the Ingomar lode, a new discovery....The Golden Flint lode, owned by H. P. Brooks, of Gold Dirt, recently yielded under stamps 6 ozs., 15 pwts.,—about $145 currency ..... Chatillon and Smith, in the mouth of Sawpit Gulch, Russell District, are down 16 ft., and have a crevice of 18 inches of quartz of good quality....Munda and Robertson have leased the 16-stamp water mill at the head of Spring Gulch, and are running on surface quartz from the patch diggings on Quartz Hill.

Georgetown.—Charlie Lusk has presented us a very rich specimen of sulphide of silver from the Federal lode. The specimen will yield at least 75 per cent. of its weight in fine silver. One ton of ore was recently reduced from this lode that yielded 1,388½ ozs.—coin value, $1,740.05.

Middle Park Mines.—Denver *News*, 29th: We learn from Dr. Latham that these mines worked for the last year and a half, are now beginning to attract some of the attention they deserve. Ten to fifteen dollars a day to the man have been taken out. Six hundred dollars in nuggets of from $1 up to $20 from these mines is now on deposit at the first National Bank.

Idaho.

Potosi Mine.—*Wave*, Oct. 7th: We visited the mine on Friday. Free gold is visible in a large proportion of the rock on the dump, and it is expected that a few feet more will reveal something still richer, as they will then be under a portion of the ledge that is immensely rich on the surface. We saw rock taken last fall from the cut above the tunnel so full of wire gold as to cling together after being broken. The object in leaving the lower works and moving up the hill now is to get an opening into the ground while the weather is good.

The Ditch.—The Florida mountain ditch, from Long Gulch to the diggings, is all being excavated. Each claim owner has taken fifty rods to construct, and they are confident of being able to finish it this month. The ground is extremely rich in fine gold.

A. P. Minlar has bought the M. & M. Co.'s quartz teams, etc., and will remain here.

Wagontown Placers.—We are informed by parties interested that there will probably be between three and four hundred men employed in these mines next spring and summer. The pay ground extends twelve miles along Jordan creek, and some places the bars are quite wide, while in others the hills prospect well.

Sinker.—The mill started up Friday on Corduroy ore. They have out about three hundred tons at the mine of splendid looking rock.

Bullion.—The shipment from this camp to San Francisco by express for the month of September were small, amounting only to $69,000, coin.

Montana.

Gold Creek.—*New North West*, Oct. 1st: Companies have been working on the second bedrock, 12 ft. below the first, taking out as high as $1,200 to $1,800 per week to six hands. No one doubts now that the whole bar will pay. But not content with this, several parties have sunk through the second and found another bed of pay gravel. The bar at this rate is inexhaustible. All that is needed is water.

Philipsburg.—The James Stuart mill has been leased to Purvine & Trench for one year. The lessees receive $20,000 per annum. Purvine & Trench agree to at once replace the Wheeler pans. The new pans will cost $11,000. The firm is wealthy. The mill will do custom work for the present, parties having agreed to supply it with ores.

A nugget weighing $76, gold, was picked up on Connelley & Reynold's claim, up Pioneer Gulch, last week.

Rock Creek.—About the 1st of August, McKay, Pierce and Niles staked the Vulcan lode, on the west fork, one mile above its confluence with the east fork; and three weeks since were down 90 ft. Rock expelled from it yielded at the rate of $400 per ton. There are bar diggings discovered in the same vicinity that would pay $4 or $5 per day but no water can be had on them.

Nevada.

COPE DISTRICT.

Mill Machinery.—Elko *Independent*, Oct. 6th: The engine, boiler, pans, settlers, battery and complete machinery for the Drew & Atchison 10-stamp quartz mill, was loaded on teams for Mountain City, yesterday. The machinery is new, and was selected by experienced hands.

New Discoveries.—Bradbury, from Mountain City last evening, reports the discovery of new mines 20 miles east. The ore is rich, and the veins well defined. A new district will unboubtedly be organized. Everything in Cope is represented as looking better than ever.

Rare Specimens.—Same of 9th: Some of the finest silver-bearing rock we have seen, has, within the last few days, been brought into town from Cope. Fred. Hafford has received one chloride specimen weighing 52 lbs., which, it is estimated, will work $2 per pound. It was taken from the Mountain City claim.

HUMBOLDT.

Unionville.—Correspondent of *Independent*, same date: "The product of the two mines worked by John C. Fall & Co., and S. D. R. Stewart & Co., is greater than at any former time. The shipment of fine bullion for the month is about one ton, worth $15 per pound, making about $30,000 for the month. In addition to this, each company has shipped about 25 tons of rich ore, worth $450 per ton, making an aggregate value of $22,500, or a little over $50,000 per month, as a total product of the two mines. Both of the companies are hoisting ore to the surface faster than they can reduce it; hence an increase of stamps may be looked for before long. The new mill for the National mine, above town, started up yesterday. There are several other mines being worked in the district.

A Unionville telegram of the 13th inst., says: Rich ore has been struck in the Arizona mine, John C. Fall, Supt., and in that owned by the company of which D. R. Stewart is Supt. Great excitement prevails, it being the richest strike yet made in either. The National mill has commenced work on the gold ledge owned by the company.

MINERAL HILL DISTRICT.

Live Yankee.—*Independent*, Oct. 9th: Fred. Hutchins, just returned from the district, says that this company are constantly taking out rich ore, but have stopped shipping to Austin, on account of the expense of hauling so far. The boys have taken out money enough to run them through the winter, and now propose to wait until some man erects a mill. Several new lodes have been discovered north of the Hill. One of the companies, on a new discovery, will ship ten loads of ore to Austin next week. There is an abundance of timber and plenty of water. No better investment could be made than the erection of a ten-stamp mill. The ore requires roasting, and is worked by Austin millmen up to 85 per cent.

REESE RIVER.

Twin River Company.—*Reveille*, Oct. 6th: The works of this company will be put in order at once for the resumption of business. They consist of a well-appointed twenty-stamp mill, which is furnished with reverberatory furnaces. The Murphy, the principal mine of the company, has produced about a million of dollars. The revival of operations in Ophir Cañon will be an important event to Austin.

WASHOE.

Big Bullion Shipment.—*Enterprise*, Oct. 6th: From the office of Wells, Fargo & Co., in this city, there were shipped last evening 47 bars of bullion, valued at $112,000.

Sierra Nevada—7th: The clean-up made on the 1st amounted to $7,500, enough to pay the usual dividend. This mine has become a steady going institution. None of the ore pays very high, but the amount easily obtainable is almost illimitable. In this lies the great value of the mine.

Occidental—10th: Work is progressing favorably in the tunnel. A large stream of water flows from the tunnel, but there has been no great increase during the week. Within a day or two some new deposits of excellent ore have been found in the upper works. The ore in the new deposit assays $65.

Gould & Curry.—During the past week the amount of ore taken out daily has averaged 52 tons—principally through the lower tunnel. They are drifting north and south on the seventh station, along the line of the lead.

Yellow Jacket.—The work of clearing out the north shaft will be completed in about one week, and it will require five days to open up the connection between the north and south works. They are now extracting 145 to 150 tons of ore per day. This assays from $45 to $60 per ton, and will mill from $35 to $38.

Savage.—This company are down 30 feet below the 950-foot level. The rock is very hard. They are taking out from 50 to 80 tons of ore per day. Drifts are being run north and south along the ledge, and a winze is being sunk from the sixth to the seventh station.

Ophir.—The main drift, west from the bottom of the shaft is in 679 feet, and the branch drift, to the southwest, 133 feet. They are evidently approaching the ledge. They are having the stone cut for the foundation of a new hoisting engine, which is being constructed at the Union Foundry, San Francisco. The engine will be 70-horse power, and will be in operation this month. Their new boilers are already up.

Succor.—The old mine, situated near the Devil's Gate, ie now heing profitably worked. They aro taking out 30 tous of ore per day, which, worked hy gold process, yields $18 per ton, and pays a clear profit of $11 per ton. They reduco their ore at the Succor Mill, owned hy the company.

Hale & Norcross.—A uew station has been opened in the main shaft at the 1,100-foot level, and drifting will eoon he commeuced. The winze botween the 400 and 500-foot lovels bas heen completed, and the ventilation is now perfect in that part of the mine. The new veiu on the 400-foot lovel contains very fine oro. Ahout 170 to 175 tous per day of excellont ore are heing extracted.

Chollar-Potosi.—The new building for hoisting works is ahont completed. It covers the samo ground as the one hurned down, hut is not so costly. Thoir engines and other machinery will soon he ready to act up.

Lady Bryan.—They are taking out the usual amount of ore per day, which pays from $30 to $40 per ton. They have a six months' supply.

Virginia Consolidated.—Tho shaft of this company is down 330 feet. Tho rock is becoming softer, though hlasting is still necessary.

WHITE PINE.

Weekly Mining Review.—*News*, Oct. 9th: Practical mining is driving ahead with an impetus imparted by continued large shipments of hullion. The leadings companies have funds to defray the expense of enpplies of all kinds for the winter. Men who have heen accustomed to pay assessments for two or three years in a new silver mine, hefore thinking of a possihle return, have now figures in their White Pine experience, which show fair profits for the first season's work. The men of means, whose good opinion is worth something to us, make their opinions from the actual figures. More mills are wanted. Some are coming in before winter; one or two will he ready to strike up work within a fortnight; hut all the mille now running and all in course of building would do little more than clear the dumps, by February, if not another pound of oro were to he taken out within the intervening time.

Mills and Furnaces.—The same jonrnal goes on to enumerate the stamps running and to he run, so far as known. The total number in operation is given at 165, and some 30 more are named as in course of building. Smelting furnaces are multiplying. A good many who have claims in the Base Range and the foot of the Hill, are even putting in togetber for the erection of small furnaces. They huild, mostly, the common Mexican draft furnace with no blast. The Whi e Pine Smelting Works are running two furnaces, one of a capacity of 20 tons, the other 8, daily. The daily average of hullion is about 4 tons. This is worth, per ton, average, $50 in silver, $90 in lead. That is the lowest computation we have secn.

W. H. Prichard & Co., a San Francisco firm, are huilding six smelting furnaces in Mohawk Cañon, East slope of the Base Range. The company has a 20-horse power engine, which affords driving power for the hlast. Theso furnaces will he fired inside of ten days.

Hill's reverheratory furnace, at Swansea, will he going in a few days.

The *Empire*, of the 10th, makes the number of stamps in operation 181,—and in preparation, 80. Of the smelting works it says: According to the most reliahle data we have been ahle to glean, the Base Range furnaces have produced, the present season, in the neighborhood of 250,000 pounds of metal worth $120 per ton—$40 in silver and $80 in lead. Contracts have been made for its transportation to San Francisco at $40 per ton. Tho cost of mining and smelting is estimated to be $35 per ton, leaving a clear profit of $45 on each ton of metal produced. The common draft furnace, constructed at trifling expense, is mostly in vogue. Mosbeimer and some others, however, have introduced the hlast furnace, with all the modern improvements, and, as a general rule, this style is yielding the most satisfactory results.

Bullion.—*Empire*, 10th: It is impossihle to get the exact amount of bullion turned out weekly, as we have no returns from the Egan mill, the Monte Cristo mill, or Newark. Estimating the daily yield at $60 to the stamp, 181 stamps heing employed, we have $76,000 per week.

Items.—*News*, 9th: Aurora Consolidated takes out ore enough to supply two mille and accumulate on the dump, besides shipping bullion....Eclipse Consolidated has rich ore in the 112-foot shaft....Eherhardt putting ore in their mills as fast as teams can carry it. Only 20 to 30 men employed—all in ore....Noonday is in good ore....East Sheboygan makes a good showing....Hidden Treasure Consolidated shaft down 112 feet through the slate....The H. F. Rico, bas struck a fine vein of ore 150 feet west from the Pocotillo, in a shaft at the depth of 42 feet. Another shaft is hoing sunk 125 feet further west.

Items.—*Empire*, 10th: Consol. Chloride Flat ships 50 tons quartz to mill....Mammoth ships 8 to 10 tons....Oakland ships 12 tons. Pulp assays $160 per ton....Dayton mill has contracted to crush 600 tons of Original Hidden Treasnre ore.... Colleen Bawn made first shipment of ore to mill last Wednesday....Pogouip & Othello has more ore on dump than any other except South Aurora—about 1,000 tons.... Hannogan & Blasdell have purchased a large interest in the Idaho ledge....A large body of ore, worth $300 per ton, was struck in the Domingo mine on the 7th. The prospects are most flattering....Sam. Brannan's mill at Robinson, will steam up on the 20th....Fairchild's furnace is in operation.

Patterson District.—*News* 9th: Tho first hullion—that we have any account of—from Patterson District—came in this week: a bar of 437 ounces, from one ton of rock from the Rob Roy ledge. Garish is arranging to build a 20-stamp mill, and a portion of the machinery is already on the road. Machinery for use in Eley and Shoshone districts, also is on the way. The road lies through Patterson.

New District.—*Empire*, 10th: From Albert Gmelin, who just returned from Secret and Sierra Cañons, we learn that several excellent mines have been opened in both, and that a new district will be organized at once. Secret and Sierra Cañons are in Lander county, four miles apart, and forty and forty-four miles distant, respectively, from Hamilton, in a westerly direction. There are forty-five men there. Mr. Basey sent twenty-five mule loads of ore to Austin. It worked satisfactorily. Assays of Secret Cañon ores range from $37 to $400 per ton.

The water was turned into Treasure City on the 9th. The *Empire* says it is seldom that ten words convey so much as those ten. It has heen a tremendous labor, and is magnificently accomplished.

Oregon.

Nehalem Valley.—Cor. of *Oregonian*, Oct. 2d: "The Nehalem River is 200 feet wide, with rapids from one to five miles apart. The bottom is solid sandstone. We found several ledges of hard sandstone, excellent for huilding purposes. We also found a large ledge of iron, some gold and silver-hearing quartz and a small vein of copper. We found several pieces of coal that had washed down and lodged on the har of the river, which burned very readily in our camp fire; also a ledge of coarse oil-stone."

Utah.

Ore Shipped.—The Salt Lake *Telegraph* of the 30th ult., says that 20 tons of ore were shipped recently from the mines of Little Cottonwood to San Francisco. A week before, 10 tons were also shipped from the same point.

One of the Visitors to the Fair.—Persons who attend the Fair early in the afternoon may frequently see a small hoy, ahout 14 or 15 years of age, who is afflicted with club feet. There is otherwise nothing peculiarly noticeahle about him. But we venture to think there will he soon. This poor boy, who was educated at one of our public schools, is an excellent mathematician, and daily visite the Fair to examine a certain complicated machine on exhibition, of which he has nearly completed a working model, with several important improvements. Those who have seen bis work pronounce it a marvel of mechanical ingenuity; and when its object shall be made public, it will certainly create a sensation. Such cases as this afford a strong argument in favor of Free Schools and Mechanics' Fairs, and the example of this poor deformed hoy, we hope, will be followed by many of the bright little fellows who visit the Fair.

The News.—Everybody wants to learn the latest news in these fast times of telegraphs, lightning trains, and high-pressure steamers. W. E. Loomis, corner Sansome and Washington streets, to keep pace with the wants of his patrons, has increased his facilities for obtaining the news from all parts of the world. At his store, scientific and miscellaneous newspapers and magazines may be had in all languages, of the latest date and at the lowest prices.

Collins' Oscillating Quartz Crusher.

Mr. John A. Collins exhibits a working model of an oscillating quartz crusher, which has been devised to overcome hy an economical use of power, the main difficulty encountered in quartz crushing—that of getting rid of pulverized quartz as fast as it is reduced to a sufficient degree of fineness. The model exhibited, though having tho appearance of being quite complicated, is nevertheless really simple in its construction.

The crushing is produced by the oscillation or rolling back and forth of an iron wheel, under a pressure of several hundred times its own weight, on an iron hed-plate, walled up on either side, so as to take tho form of a trough, open at hoth ends. The quartz is fed, first upon one end of this trough, and then upon the other, while the wheel is made to alternately pass over the same. A suitahle device is affixed to remove all the quartz from either end, immediately after each passage of the wheel, discharging it into a rotary screen, which deposits that reduced sufficiently fine into one apartment, while the coarser finds its way, automatically, into another, from whence it may he again elevated, automatically or otherwise, to the feed platform. By this arrangement no power is uselessly exponded on work that is fully completed; an entire new charge of quartz heing presented for every movement of the wheel. The power required to drive the wheel is reduced to its minimum by an ingenious use of anti-friction rollers. The crushed mass can he reduced to any degree of fineness hy the employment of finer or coarser screens.

If the practical observer will imagine the above described operation, which is even more simple than ordinary stamps, he will have precisely what is shown in this model divested of its automatic feed attachment. The crushing of a piece of quartz hy causing a heavy wheel to pass over it on an even iron floor, is probahly the most economical use of power in that direction which can be devised. The cause of the failure of this principle, as applied in the ordinary Chili mill, is owing to the practical difficulties in the way of effecting a ready discharge. The device of Mr. Collins appears to have provided a full and efficient remedy for this defect. The plan is certainly worth the attention of millmen, and we trust some party will be found possessed of the requisite means and having sufficient confidence in the idea to give it a practical trial. Col. Collins has labored long and earnestly in working up this idea, and we trust he may yet reap a rich reward for his ingenuity and perseverance.

The Colonel also exhibits an oscillating cylinder, for either wet or dry crushing, which, if desired, can he made to take the place of the wheel already described, and do double duty, by more finely pulverizing and amalgamating a charge inside, while performing the crushing process already described by its outer circumference.

Small.—There are some members of the San Francisco press, who appear to be desirous of bringing the profession of reporter down to the lowest possihle point of degradation. One of these individuals was last night invited with others, by the Managers of the Fair to accept a friendly glass of wine and a mouthful of cake, as a mark of the Managers' appreciation of the services of the press. After drinking the wine, eating the cake and pocketing the cigars thus generously tendered, this individual took occasion to publish scurrilous remarks about the Managers of the Fair and the reporters of the press. Such conduct is superlatively disgraceful.

The California Building, Loan and Savings Bank allows one per cent. per month on all six months' deposits. The earnest work which its President, Thomas Mooney, has done for the institution during the past few years has made it popular, and benefitted thousands of laboring people. It now holds a prominent position.

Professor Slingdechisel, who is here on a visit, says that the understanding of the California-raised ladies is better at one end than it is at the other. He thinks there is not sufficient at the upper end, and a little too much at the lower one. Feet, you know, are all the rage in California.

Copper Smelting in Alpine County.

An important work is under way in the hands of Mr. Rickard, for an English company working one of the copper lodes near Mentler, Alpine County—no less than the erection of a large sized hlast furnace, at that place, for reduction of copper pyrites, ores of which exist in great quantity, and with facility for mining. Mr. Rickard is an old copper smelter, having had experience in Chile and elsewhere. It has been a matter of surprise that in this country, where we can boast many first-class copper mines, nothing has been carried through in the way of reduction, so as to turn our rich deposits to account. Chile has rich copper mines, hut not any richer than California, Nevada and Arizona, whose mines remain undeveloped.

Fire-brick are obtained, of English manufacture, at $40 per thousand. A root-blower, of the largest size, like that on exhibition at the Fair, bas already been sent up; and 12,000 bushels of charcoal have been contracted for at 20 cents per bushel. A large number of men are now at work burning charcoal, and hastening to complete the job before the winter months set in. The vein is eight feet wide.

Generous.—At an informal meeting of the Board of Managers of the Fair, held last night, it was proposed to offer the use of the Pavilion to the managers of the Mercantile Library, for the purpose of enabling them to hold a fancy fair and promenade concert, in order to raise funds to help the library out of its present pecuniary difficulties. The suggestion is an eminently practical one, and with the aid of the managers of the present Fair, may be made to pay from $20,000 to $30,000 to the library fund. The offer is generous, and we hope will he accepted.

Cashmere Goat Skins.—Placed against the wall near the southeast corner of the music room, may be seen four bright-stained skins, exhibited by Mr. Henry Brook. Their history will no doubt be interesting to ladies, for they are the product of animals which yield the celebrated fiber from which the world-renowned cashmere shawls are manufactured. The specimens now on exhibition were bred and reared at Latrobe, Sacramento County, by Mr. Thomas Brook, and are the first of the kind ever exhibited in California. As these skins are inaccessible to the touch of the visitor, without the aid of steps or a ladder, the exhibitor, in order to gratify such as may feel an interest in contrasting the great difference in the quality of the fiber of the casbmere goat and ordinary sheep wool, has considerately placed upon the counter below the nearest window, two small ordinary stained sheep rugs, with cashmere goat fringes, where they are within easy reach. The contrast between the two is very great. These skins were on the backs of the animals at the opening of the Exhibition.

Stained California Sheep Skins.—To the east of the preceding, are placed six California sheep skins, also dyed and manufactured hy Mr. H. Brook. We pay annually no inconsiderahle sum to France and the Eastern States for articles of this description, for use as buggy, parlor and bedroom rugs. It is gratifying to see that for all these purposes we can in future be supplied by our own growth and manufacture. At the reduced prices at which we are informed they can in future be supplied, if the home manufactured is patronized in place of foreign importations, these comforts would be found attainahle hy miners and others, to the great benefit of the health of the occupants of shanties in the high Sierras, during the inclement season. Had we space, we could point out many useful purposes to which the miner could apply these skins.

A New Sulphur Acid.—Prof. Schutzenberger has discovered a new acid having the composition SO, HO. He calls it hydrosulphurous acid; hut *Scientific Review* saye it is undoubtedly the true hyposulphurous acid, analogous to hypophosphorous acid, etc. Thie term, however, is unfortunately employed for another acid, the composition of which bas of late given rise to some discussion. It is formed when snlphurous acid is placed in contact with zinc. "It possesses reducing qualities equal to those of nascent hydrogen; it bleaches indigo and litmus almost instantaneously; it forms a characteristic salt with soda."

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San Francisco:

Saturday Morning, Oct. 16, 1869.

Notices to Correspondents.

J. E. S., San Francisco.—*Tri-section of an Angle.* This problem as eolved is interesting and undoubtedly correct. But it would be as easy to solve and demonstrate the same hy the use of a pair of compasses as hy a square; involving in hoth cases a mechanical applicatiou which appears to us inadmissible in geometrical reasoning. For carpenter's use, and for all practical purposes, we tbink the triection of an angle is satisfactorily solved in the manner described.

A. J. M., San Francisco.—*Squaring of the Circle.* Benson's method appears to us faulty in proceeding upon tbe deduction that the solid content of the inuer half of the cylinder generated, as measured by tbe inner half of the radius, is equal to tbe cubic content of outer half, wh ich ie obviously not the case.

"Old Mac."—The definitions of all the words which you name are given in full, together with their derivations, in "Wehster's Unahridged."

Hortas, Stockton.—Your query with regard to the California Pepper Tree, so called, will he fully answered next week.

Personal.—Mr. A. B. Paul wishes to have it understood that he is not the gentleman of the firm of Rickard & Paul, the latter heing a Cornish miner, resident iu Londou, the European agent of Mr. Rickard. * * * Mr. Ryerson, the inventor of the amalgamating process, in use on the Mariposa estate, is in town and busy. * * * Deetken, of Grass Valley, has returned from his European trip, with new ideas. * * * Three Englishmen of note in the mining way,—Mr. Salmon, Mr. Barrett and Capt. Batters—who have been stopping in San Francisco for a week, have sailed for Belmont, Nevada, in tow of Col. Buel. * * * Messrs. Caswell and Hodges, mining engineers, have been visiting and examining the mines of Colorado and Nevada iu a tour of eleven weeks. * * * E. R. Howe, late of the Pomeroy O. Iron Works, is iu towu, *en route* for Arizoua.

Petroleum as Fuel for Cupola Smelting.—During several weeks past an inventor under the patronage of a Mr. Grunhaum has been engaged in experiments to smelt galena, in a cupola furnace with petrolenm as fuel. He introduces vaporized oil in jcts at a dozen or more points, into the smelting zone; the furnace being in principal of construction like Sefstrom's assaying furnace, double, tbe outer enclosure in this case being for vaporization of oil mixed with air, while Sefstrom's object was only the warming up and distribution of his air hlast. We are not able to speak advisedly as to the working of the process, not having witnessed the trial, but understand that the results were partially satisfactory. Further experiments are to be made in one of the smelting works of this city.

Age and Depth of the California Valley Alluvium.

Tbere was a time, and that was during the deposition of the auriferous slates of the Mountains, away back in the Jurassic Age, when the Great Ocean washed unobstructedly to the feet of the granite Sierra Nevada. Tbe muddy sediment that afterwards became bardened to slatcs, rose out of the ocean with the rising western part of the Continent—a fact needing no stronger proof than the circumstance tbat they are at present *not* under water. A series of subterranean ridges next began hulging up "off the coast," in tbe Cretacous Age, and during the Tertiary period these also lifted themselves out of the waters, becoming the Coast Range. The Tertiary, Cretaceous and Jurassic are tbe last three great subdivisions of Geology.

But Sacramento and San Joaquin valleys, instead of rising with our hills of tbe Cretaceous and Tertiary ages, sank, in the method and manner of corrugation which is so cbaracteristic of the world's physical geograpby. Compress the edges of a sheet of paper, and it will be seen that while a ridge rises in one place, there is a corresponding depression, of equal but inverse corrugation, in another.

How deep tbe alluvium of Sacramento and San Joaquin valleys may be, has never heen ascertained, and probably never will be by actual digging, or horing, since water level and the most ample supplies of artesian well water, under great pressure, can be obtained at a few hundred feet. Wells have been dug to 100 feet, and bored to 350 feet depth in many localities in the great valley, without striking anything in any case more solid thau "hard pau," sand, and layers of gravel,—along which waters percolate—the drift very evidently of tbe Cretaceous and Tertiary hills adjoining the valley.

The age of this drift is more positively determiued by the recent finding of a fosoil elepbant at the bottom of a well dug in the central part of San Joaquin Valley, by W. F. Brown, Esq., eight miles south of Banta's Station, on the Western Pacific Railroad. For the facts, and specimens of a tusk and soil where the body of the elephant still lies, we are indebted to the courtesy of Mr. S. H. Herring, the horticulturist. These epecimens can be seen at the Fair, under the head of Soils and Tertiary Fossils iu tbe systematic collection in the Mining and Scientific Press compartment. At twenty feet the well-diggers left tbe clayey soil, and struck a layer of gravel ten feet thick; at forty-five fcet another layer of gravel; then clay, to a deptb of eighty feet, where the specimens were met witb in a third layer of clayey gravel, as exhibited. It may be presumed that the depth of the valley alluvium to bedrock is eqnal to the average height of tbe Coast Range, say 2,500 fcet. At Marysville, at Stockton, and at San José, the well diggers and artesian borers report, however, tbe same regular alternation of clays, sands, and gravel to the greatest depths; the latter being at Marysville "wash gravel" to a depth of at least 100 and 200 feet, while our specimen consists of small quartzose fragments but partially rounded.

The elephant and mastodon found so numerously in tho deep placer mines of the State, and not unfrcquently in association with humau relics of the "Stone Age," belong to the Post-tertiary Period, the exact geology of which is unusually interesting in California, as showing the earliest kuown existence of the human race upon the face of tbe globe.

A Good Thing to Have in the House—A policy from $5,000 to $10,000 in a secure Life Insurance Company. No man with a family or without one should neglect to have his life insured. The Connecticut Mutual is among the safest and best companies iu which to make such au iuvestment. *

Winn's Patent Shampooing Apparatus.

By the use of the apparatus here shown, the unpleasant mode in which the operation of shampooing is usually performed, is converted into a neat and tidy process, very effective and decidedly agreeable. By the aid of this apparatus, the head is washed and scrubbed in a hath of water, of any desirable qnantity or temperature, and the employment of which, upon the top of the bead, is productive of the most delightfully agreeable sensations, such as impart an entirely new feature to the process of shampooing. The apparatus is tasteful as well as substantial in its construction; and its use is equally as effective when applied to the long, flowing hair, as worn by the ladies, as to tbe shorter hair of gentlemen's wear.

To form this apparatus, a rim or bottomless pan is first constructed, with a gutta percba lining so devised and provided with an elastic strap, as to fit tightly around the head, below the principal part of tbe hair. Tbe drapery or curtain, which is seen to fall below the rim, is both for ornament and use; it serves to conceal from view the somewhat unsightly straps, lining, etc., which form the water-tight joint between

the bead and apparatus thereto applied, and a subsequcut elastic gutter, which is strapped tightly about the head, at the extreme lower part of the hair, to catch any water which may possibly escape from the main apparatus. As seen in the engraving, each has a flexible tube appended, by which the water may be carried off to a sink or other suitablo receiving vessel, so that the person will have no occasion to leave his seat during the entire operatiou, or even to remove his neck-tie.

The soap-suds or any other shampooing fluid which may be employed, is poured upon the top of the head, within the rim, after it has been properly adjusted, and a brush or mop, or sponge, or any otber suitable instrument, is theu employed witbin the body of the liquid to clean the bead and hair. The liquid is readily discharged through a stop-cock and the tube shown in the rear, and fresh water for rinsing applied, as often as may be desirable. Standards, with curved rests or supports, placed upon the shouldere, and adjusted by screws upon the top, all shown in the engraving, are affixed for the purpose of taking the weight of the apparatus and a portion of the weight of the water from the head. The flexible rim which adjusts the apparatus to the head makes this device practicable.

Previous to putting on the rim an elastic strap is placed around the bead to hold up tbe bair intended to he included witbin tbe rim, when it may be properly washed and cleansed. Tbis arrangement is particularly useful and indispensable iu fact, in shampooing the head of a lady with flowing hair. This combined apparatus renders the process of shampooing as easily and as readily performed for a lady as for a gentleman. Mr. M. L. Winn, of this city, tho inventor and patentee, exhibits his apparatus and the practical employment of the process, iu a booth near the east entrance of the north upper gallery of the Mechanics' Pavilion. The patent for the U. S. was obtained by the M. & S. Press Patent Agency, through which European patents are being secured.

We are assured by the inventor that all who have been favored witb sbampoo by means of this new apparatus, are unanimous in the expression of the higbest encomiums upon it, in every particular. One lady remarked, when the apparatus was being removed, tbat she would leave the best dinner ever spread, for the enjoyment of such a luxury. An intelligent barber to whom it was first exhibited, after a critical examination and test, remarked that it was a complete instrument for the purpose intended. It is confidently expected tbat the introduction of tbis apparatus will largely increase this branch of tbe barber's business. A saloon will soon be fitted up on some one of our city thoroughfares, when the public will have tbe pleasure of testing its usefulness, each one for himself, and then the article will be on sale and rights disposed of.

Wet Crushing Without Loss.

Mr. Partz, of Oakland, has devised a very simple method of accomplishing this important result, where but little or no concentration is necessary, down as far as the process of amalgamation in tbe pan. He merely uses tbe same water over and over again, which is pumped back, to the stamp mill.

Tbe advantages of amalgamation in battery for separation of coarse gold, are thus first reaped; then the pulp flows into tanks (intermediate hlankets or otber concentrating contrivance not necessarily interfered witb) of a number of compartments, in which the ore separates and sizes itself into as many qualities as may be desired. When one set of compartments gets filled with amalgamation matter, the other is used, and the contents of the first are worked up in the pans.

As it has been found that float gold will disengage the particles of air or water gae which make it huoyant, when heat is applied to 100 C., Mr. Partz next conducts a steam pipe into the tank, to heat up the material before amalgamation; effecting thereby besides, the well knowu chemical acceleration of tbe application of beat in the succeeding process. Mr. Partz maintaine that but 30 per cent. of the gold, and about 60 per cent. of tbe silver in our ores, are usually saved. Certainly the simple plan of saving the water is as easy to try as it is adaptively hit upon; and it must be effectivo as far as it goes. Where, however, the quantity of gangue is large, and systematic concentration is necessary before metallurgical treatment will pay—except for saving of float gold—the advantage of returning the water is not so obvious. A careful worker would doubtless find, on trial, that there is many a case where the water could he saved to purpose. On the other hand, there will be the drawback, if it should prove to be a drawback in practice, of working with impure water in the process of battery amalgamation, which might diminish somewhat the product of that method of treatment.

Foster's Substitute for Brass Hinges. Mr. C. H. Foster exhibits at tbe Pavilion a substitute for brass hinges, in which he galvanizes tbe common iron hinge, employs a brass instead of an iron pintle, and bushes the eocket in which the pintle works with sheet brass. By tbis improvement he claime to save 100 per cent. in cost of manufacture, durability and strength over the common brass hinge. These hinges have heeu extensively employed upon steamers on this coast, and are fouud to possess all the advantages of the brass at a cost but a trifle above that of the iron hinge. Samples of these hinges may be seen on tbe end of a bench near the central entranco to the machinery department; and they may be obtained of Linforth, Kellogg & Rail, No. 5 Front street. A patent for this improvement in the manufacture of hinges has been obtained through the Mining and Scientific Press Patent Agency.

Conducting Capacity of Water Pipes Expressed in Miners' Inches.

C. G., of Oro Fino, inquires :

How many inches of water, *miners' measure*, will a pipe of eleven (11) inches in diameter, conduct over a "gap" two hundred (200) feet in height, eighteen hundred (1,800) feet long, measured along the supposed track of the pipe, with twenty-five (25) feet of pressure—*i. e.*, the altitude of the point of entrance is twenty-five (25) feet higher than the point where the rock debouches from the pipe?

If you obtain the amount discharged under a simple head of 25 feet, you will have the answer, *minus* the friction that occurs, down hill, and up hill, in your pipe of 1,800 feet length. The common rule to determine the velocity of water per second, flowing through long pipes; the head or height of reservoir above the point of delivery, the length and diameter of the pipe being given, is as follows :

Multiply the product of the head and diameter of the pipe in feet by twenty-three hundred ; divide this product by the sum of once the length and fifty-two times the diameter of the pipe, and extract the square root of the quotient.

Example.—The head is six hundred feet, the diameter of the pipe nine inches, the length of pipe six thousand feet What is the velocity of the water per minute ?

Calculation.—Diameter of pipe = 9 inches = .75 feet.

Product of head diameter, etc., $600 \times 2300 \times .75 = 1035000$.

Sum of length and product, $6000 + (52 \times .75) = 6039$.

Quotient, $1035000 \div 6039 = 171.386$.

Square root, $\sqrt{(171.386)} = 13.09$ feet velocity per second.

Velocity per minute, $13.09 \times 60 = 785.4$ feet. Ans.

Having obtained the velocity per second in feet or inches, the same can be compared with or reduced to miners' inches, (under a head of six inches) or any other head, by the following table :

Let H = Head of water, in feet.

V = Theoretical velocity of water, in feet per second.

v = Ditto, ditto, in feet per minute.

H	V	v	H	V	v	H	V	v
1	8	482	15	31	1866	65	65	3886
2	11.3	681	16	32	1928	70	67	4032
3	13.9	835	17	33	1987	75	69	4174
4	16	964	18	34	2045	80	72	4311
5	18	1078	19	35	2100	85	74	4443
6	19.7	1180	20	36	2155	90	76	4573
7	21	1275	25	40	2410	95	78	4698
8	23	1363	30	44	2640	100	80	4820
9	24	1446	35	47	2851	125	90	5389
10	25	1524	40	51	3048	150	98	5903
11	26.5	1598	45	54	3233	200	113	6816
12	28	1669	50	57	3408	250	127	7621
13	29	1737	55	59	3574	300	139	8348
14	30	1803	60	62	3733	350	150	9018

The practice of the watermen is to consider a miner's inch equal to 1,200 cubic feet per day of twelve hours, which allows what is practically necessary for leakage. By the first rule above, the result is obtained in feet per minute. Multiply that by the number of minutes in a day, and dividing by 1,200 will give the number of miner's inches per day. Other very good working rules and tables are given in Weisbach and in Danbisson. Application to the Secretary of the Excelsior Canal Co., in Yuba county, or some similar old water company, is suggested for the solution of further practical points.

Special Compliment.

Messrs. Dewey & Co., *Patent Agents*—Gentlemen :—Allow us to express our thanks for the gentlemanly, prompt and business-like manner in which you have conducted our business before the United States Patent Agency at Washington, D. C. We believe that inventors on this coast will materially advance their interests by patronizing your Agency. The Reversible Door Butt and Double-Acting Blind Wiring Machine cases were hardly forwarded from your office before we were notified of their having been allowed.

Jefferson Kindleberger,
William A. Arnold.

"Do you believe in the appearance of spirits, father?" asked a rather fast young man of his indulgent sire. "No, Tom, but I believe in their disappearance, since I missed my bottle of Bourbon last night," replied the old gentleman.

Krom's Dry Concentrator.

This machine is in progress of trial in Colorado, and is said to be doing unexpectedly well, in view of the novelty of the principles employed. It is a jigging machine, in which the element of air takes the place of water. The greater difference of specific gravity between that element and the ores to be sorted, the circumstance that bubbles of air attach themselves to different kinds of minerals in water in different degree, rendering their apparent specific gravity less than the real, is not a difficulty encountered in the dry concentrator ; and the further very important advantage that nothing can be lost in the stream, are reasons sufficient to make it desirable that those experimenting with Krom's machine should perfect the application of the principle to its utmost, for use in some Nevada and Arizona mines under conditions to which it may be best adapted. Instead of water, it is air that is forced up through the jigging sieve, in successive impulses given by means of a bellows ; and, theoretically, since heavy objects fall quicker in air than in water, the blows can be more rapidly repeated, and the amount of work done be proportionately increased.

Lloyd & Stewart's Improved Anchor.

A beautiful model of Lloyd & Stewart's improved anchor may be seen at the Daily Fair Press stand, in the Pavilion. The object of this invention is to provide an anchor which shall do away with the awkward *stock* or cross-piece of the anchor in common use; and at the same time provide a device which cannot be "tripped," by becoming "fouled" with the chains, and which shall also admit of a decrease in weight of metal without losing anything in its efficiency as an anchor. Another advantage gained by this anchor, arises from the fact of its better stowage, and the further fact that it will hang more nearly over the ship's side. An improvement has been added to the model now on exhibition which has not been shown before, and which consists of a slight projection from each side of the palms of the shank, whereby the anchor takes more readily on a smooth bottom, than when employed without such projection. This anchor has attracted favorable attention for a year or two past. It was patented in July, 1867, through the M. & S. Press Patent Agency.

Among Bayley & Winter's photographic *chefs d'œuvre* we notice some fine specimens re-touched in India ink, the most striking of which is a life-size picture of Thomas Maguire; also, some fine water color pictures. But the best picture of the display is the new style of picture called the "Oleograph," the peculiarity of which is in the coloring of the face in water colors and the balance in oil, on what is termed albumen paper. These pictures have commanded considerable attention ever since the Fair opened, and have brought forth many encomiums. The most beautiful is that of a little girl in clouds; there is in it a delicacy, richness, fine relief and naturalness, which is very pleasing. Senator Carl Schurz stands most conspicuous, and is pronounced by his intimate friends natural and life-like. Other pictures of the same character might be dwelt upon for the peculiar merit attached to this new style of coloring. Those who have not inspected them are little aware of what perfection the art of photography and coloring combined have obtained. Bayley & Winter's Gallery is on Washington street, next door to Maguire's Opera House, where all the attention is paid to their customers to secure them a fine picture.

"Throw Physic to the Dogs"—Would be very good advice if people could do without medicines, but as they cannot, it becomes a very important question where to obtain pure drugs and patent medicines. J. A. Bauer, 101 Post street, makes all kinds of chemicals and compounds medical prescriptions with pure drugs. Having been in business in this city since 1849, he has a larger experience than any other druggist. Mr. Bauer is a very experienced chemist and an experienced expert in his profession. He has just moved into his new store.

Howe's Improved Scales.

Reliable standards of weight are of great importance in every community. For many years the Fairbanks' scale appeared to out-distance all others in popular favor; but of late the Howe scale, manufactured in Brandon, Vermont, seems to be gaining ground. Over 4,000 of these scales have already been purchased by the U. S. Government. They are in use on nearly all the principal Eastern railroads, and are fast finding their way into favor everywhere. They are exhibited near the western extremity of the machinery department at the Mechanics' Pavilion, where hundreds of visitors are weighed every day. Over 17,000 people have been weighed on one of Howe's standard warehouse scales, which is still in as good condition and as accurate in its work as when first used. V. S. W. Parkhurst, 305 Montgomery street, corner of Pine, is the sole agent for these scales on the Pacific Coast. Their construction is extremely simple. The platform rests on chilled iron balls, which prevents abrasion or wear to the pivots or knife edges. These balls are not connected with the weighing parts, and can be entirely removed without affecting the scale. In hay and other large scales, no pit is needed; and it is claimed that these are the only scales which will weigh correctly out of level, or can be used on a side hill or other incline. They exhibit no variations when heavy weights are moved from the center to either extremity of the platform, as it is claimed, is the case with all other large platform scales.

Mr. Parkhurst, as above, keeps constantly on hand a large variety of these scales, portable and otherwise, suitable for the railroad depot or track, the warehouse, grainery, rolling mill, the counter, or the post office. Warehouse scales are furnished either portable or dormant.

New Publications.

Fifth Edition of Hittell's Resources of California.

A. Roman & Co. have just issued the fifth edition of this very useful work, with additional matter, contained chiefly in an appendix of forty pages on Oregon, Washington and Nevada. The introduction gives a brief review of the features in which California and the neighboring States have made their most marked advances since the issuance of the previous edition in 1868. Mr. Hittell's succinct and very acceptable style of conveying his information, renders the work not merely valuable, and indispensable, but entertaining and instructive to every dweller on these shores. The price is $1.50. We suggest to the publishers that a good and cheap map of the State, containing original features if possible, bound into the next edition, and sold for about $2, or $2.50, would multiply greatly the value of the book, and would prove profitable to them.

John and the Demijohn; a Temperance Tale, by Mrs. Julia McNair Wright. Boston: Henry Hoyt.

This is a pleasant boys' and girls' story, inculcating temperance principles, yet in an entertaining manner. It is just the kind of book that makes character, and such as should be put into the hands of boys and young men exposed to the examples of dissipation and intemperance. Illustrated. For sale by A. Roman & Co.

Wife was undressing little four-year-old Charley the other evening. He silently felt of his chubby arms a little while and then looking up into his mother's face, he said : "Mamma, who made me?" "The good man up in the sky," answered mamma. Charley turned a steady, sober, searching look through the tree-tops into the clear beautiful, star-lit sky for a moment, and then innocently capped the climax with the important question: "But, mamma, who took me down?"

A Curious Fact.—Jones says that he has never seen a bright, cheerful, good looking woman advocating womans' rights. Such women get all the rights they want. It is only your crabbed-odd-cross-grained-sour-angled-faced-contrary-made of the sex who can't get the rights they want, and don't deserve to. The reader must remember that Jones is an inveterate old bach.

A little boy, in giving an account to his brother of the Garden of Eden, said: "The Lord made a gardener, and put him in the garden to take care of it, and to see that nobody hurt anything or posted bills on the trees."

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to Dewey & Co., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For the Week Ending October 5th.

Sluice Box.—D. F. Hawks, Timbuctoo, Yuba County, Cal.

Gang Plow.—H. N. Dalton, Pacheco, Cal.

Hoisting Machine.—William Eppelsheimer, San Francisco, Cal.

Rock Drill.—Charlton H. Davis, San Francisco, Cal.

Pianos on the Pacific Coast.

No State in the Union, according to its population, buys so many pianos as does California, and large numbers of the best Eastern made instruments are being constantly imported to meet the increasing demand.

Mr. Edward F. Pierce, at 228 Sutter street, in this city, is doing a large business in this line, being sole agent for Weber's, Hallet & Cumston's and Miller's pianos, and for Smith's parlor organs. All pianos sold from Mr. Pierce's warerooms, are imported by him direct from the manufactories, and are fully warranted to remain perfect in any climate, moist or dry. The Hallet & Cumston has long been recognized on this coast as the favorite piano, where a moderate priced first class instrument is desired.

Smith's parlor organs have also established for themselves a reputation here, and the following letter from the leader of the Boston Peace Festival, will show the estimation in which they are held in the States :

"Messrs. S. D. & H. W. Smith—*Gentlemen :*—My attention was particularly called to your American Organs by one which was used in the public performance recently of the oratorio of the "Creation," under my conductorship. It rendered valuable service in the support of the choruses and accompaniments of the recitatives.

The purity and sweetness of tone was excellent, and I was especially struck with the great power of the sub-bass notes. This has led me to make a careful examination of your different styles of organs, and the interior workmanship at your manufactory.

The quality of tone bears the closest resemblance to the pipe-organ ; and I cheerfully testify to their great superiority in this respect, as well as in the finish of the mechanical parts. Carl Zerrahn."

The Weber piano is as yet new to this coast ; but its reputation at home has induced Mr. Pierce to pay a high price to secure it for California. In New York City it is rapidly taking the lead over other instruments, and is the favorite concert piano. The following quotation is from Watson's *Art Journal:*

"Twelve-months ago the Weber Grand Pianos dawned upon the public, and now they rank with those of the first makers, played upon by the most eminent artists at the best concerts in New York and other cities, and at the series of concerts given by M'me Parepa-Rosa and Miss C. Kellogg, during their extended tours through the United States. It will be acknowledged, we think, that, considering the brief term of their existence, the Grand Pianofortes of Albert Weber have created a greater and wider sensation than those of any other maker. His square pianos have so long held a brilliant reputation, and continue to speak for themselves, that they need no further commendation from us."

"You have lost some of your friends, I see," said a traveler to a negro whom he had met on the road. "Yes, massa." "Was it a near or distant relative?" "Well, purty distant ; 'bout thirty-four miles."

A little boy out West was asked if he knew where liars went, and answered yes—they went to New York to write for the papers.

An Irishman complained to his physician that he stuffed him so much with drugs that he was sick for a long time after he got well.

A couple of doubtful females were arrested yesterday. One was Miss D. Meen Orr, the other was Miss D. Moral Ized.

The lick-her question—shall a man be allowed to whip his wife?

[From the Mechanic' Fair Daily Press, Oct. 11.]

Pacific Saw Manufacturing Company.

Tha display mada by this firm, (composed of C. P. Sheffield, N. W. Spaulding and I. Patterson), is worthy of spacial attention, being one of the leading displays of tha Fair. It is an extensiva arrangement of aaws, etc. Circular saws from one inch to nearly six feet in diameter, and hand, cross-cut, and mill sawa, from 14 inches to 12 feat in length, and so placed that a very excellent design of a steam engine and othar figures have been formed. It would be usaless to make allusion to any particular part of thair exhibition, it is of so varied a nature, embracing saws of every description. Saw handles, planing knives, curriers' knifa blades and slickers, reaping and mowing machine sections, plastarers' mitering rods, etc.

The first saws manufactured in this city from sheet steel, wera manufactured by them and exhibited at tha Mechanics' Instituta Fair held in this city in 1865. At that time all tha work was done by hand, even the polishing of a 12-foot muley saw, (the plata of which weighed, before cutting tha teeth, 140 pounds). At the closa of the Fair, this larga saw was taken to the mill of Messrs. Macpherson & Wetherhee, at tha Noyo river, and, after a fair trial, pronounced by tham better than any imported saw thay had ever used. Since than, they, as well as nearly all tha other mill owners of this coast, hava continued to use tha saws manufactured by this company.

In 1866 this firm commenced operations on Pine street with one saw maker and one saw grinder besides thamselves. Their business increased steadily until their factory became too small for the extra amount of business done, when they were compelled to erect the building which they occupy, at 17 and 19 Fremont street, where they now employ an average of 35 hands, and have fitted up their workshops with the newest and most improved machinery, for the manufacture of the various kinds of saws made by them.

Judges allow that the exhibition by this firm surpasses anything of the kind they have ever seen in any other city, in the East or Europe. They claim to be able to compete with any manufactory in the world on *first quality work*, as they make this their specialty. In fact they have literally curtailed the importation of first class circular, muley, mill, cross cut and other saws, to the estimated extent of some sixty thousand dollars a year.

We have been somewhat particular in mentioning the above exhibition, for the reason that it gives us pleasure to encourage every enterprise that adds to the building up of manufactories on this coast. We have homes for thousands of impoverished yet skillful mechanics and artisans, not only from Europe, but also from our large and over-crowded cities East. We want work for our unemployed, and every factory that furnishes a chance for the youth to learn a trade is a benefit to this State.

Let our citizens encourage home industry, and if prosperity attend the enterprise, capital from abroad will invest among us and a new impulse will be given, and fresh vigor will infuse itself into our already growing and flourishing city.

A Really Valuable Invention.—Johnson's equalizing steam heater is one of the most useful and economical devices for heating and ventilating buildings that has ever come under our notice. By the application of a jet of gas, or a kerosene flame to a very small quantity of water, the whole of a large room is kept at an equable temperature for any length of time. We call the attention of visitors to the Fair to this apparatus on exhibition, or they can see it in operation at Fuller's, 149 Montgomery street. It is the cheapest, cleanest, and healthiest heater known.

More Eastern Fairs.—Faneuil Hall and Quincy Hall, Boston, have been rejoicing in the splendor of a Mechanics' Fair, which, according to the enthusiastic reporter of the Boston *Journal*, was to be, "in many respects," the finest exhibition, etc. The Vermont State Fair at Burlington,—of an agricultural cast,—drew forth half of the brown and rusty people from tha slopes of the Green Mountains, and some from Canada. "Mr. T. W. Park, of Bennington," says the reporter, "has on exhibition some excellent Durham stock, including two very fine cows."

[From the Mechanic' Fair Daily Press, Oct. 9.]

Elegant Furniture.

Visitors at the Pavilion are unanimous in their expressions of admiration at tha exhibition of furniture thera made; nothing equal to it has ever hefora been seen on this coast. This display forms one of tha chief attractions at the Fair, and tha extensiva warahousa of N. P. Cole & Co., of this city, makes a most notable exhibit. All that can ha effected by a combination, of art, tasta and variety, within tha limited apace allowed, is thera brought to bear. Whether we regard tha matchless beauty of the woods employed, the exquisita tasta of the upholstry, or the judgmant exercised in the designs and finish, equal credit must be accorded, and the scrutinizing eya fully appreciates the pleasing forms and elegant designs developed by patiant and positively skilled labor.

Most of our readers have doubtless seen this exhibit; but if they will take this paper in hand and come with us to tha furniture department of tha Fair, perhaps we can impart soma new ideas and give them a more full application of this really elegant display.

Standing by the upper or west end, we have first a mottled walnut bed-room set, comprising burean, bedstead, washstand, and somno, in beeswax and oil, well and and substantially finished. Next to that is a library set, in Russian leather, in the style of Alexander IV, finished with raisad panels, highly polished and trimmed with porcelain and silver nails, which afford a pleasant relief to tha somhre shade of tha ganeral finish. Each of these sets exhibit in their substantial workmanship a most pleasing contrast with the ordinary fabrications of such furniture as is generally palmed off in this age of shams.

We now come to a superb marquetry cabinet, with center-table to match, exquisitely inlaid with some forty rare woods, and emblazoned with porcelain medalions—that upon the cabinet heing an elegant *vignette* of Christopher Columbns. Next and near the center of the exhibit is seen the "Grand Sultana," upholstered with tricolored silk, and forming a chair fit for an empress, and one to which no description can do full justice. It is, as its name implies, after the Turkish pattern, except in the construction of its frame, which is of steel, and supported entirely hy the arms. By this arrangement the least possible pressure causes the chair to conform readily to the position of the occupant, while the open form aronnd the seat, covered merely by a loose and elegant fringe, allows a free circulation of air ahout the person of the occupant, and prevents the unpleasant and unhealthy warmth insepara-hle from the use of ordinary Turkish chairs.

In the rear of this is shown the much-talked-of President's chair, California's elegant gift to the White House at Washington, the design and execution of which was entrusted to the house of N. P. Cole & Co. This chair has already heen fully described and illustrated in our columns.

By the side of this we have another rich exhibition of California taste and workmanship, in the shape of a mosaic cahinet, which, also, to be appreciated, must he seen. Messrs. Cole & Co. have also two tables on exhibition, of tha same style of work and executed hy the same artists. Wa come now to a princely parlor set, in gilt and enamel, of the "Empress Josephine" pattern, upholstered in green and gold, and embracing seven pieces. By the side of this parlor furniture is a laurel bedroom set, which is a marvel of taste, heauty and finish. A set of the same pattern, but of less elaborate finish, was exhibited by this house last year, which brought them several orders, all of which have been filled. The set now on exhibition is made of selected lanrel, interwrought with plain walnut, and all superhly finished.

The furniture above described would grace even the peerless galleries of European noblemen, and suffer nothing when compared with the most elaborate work of French or English shops. No wood in the world can excal in finish or beanty the native laurel of California; and no European work, whether chaste or florid, can surpass that here shown from the shops of San Francisco.

Machinery Invades the Orient.—In the district of Cachar, Northern India, machinery has baen introduced for rolling the leaves, and a new process has been adopted for withering them.

A New Mining Pan.

Mr. Albert Moore, of San Rafael, a well known pioneer quartz miner of Amador County, is now constructing at tha Golden State foundry, in this city, a mining pan, on principles somewhat novel, and quita unlike auything now in usa. This pan is a grinder, a pulverizer, and a settler, combined. It can he made and sold for $1,000; weighs less than any other pan of equal capacity—ahont 6,400 pounds—and will answer every purpose of a completa prospacting mill. Cuhes of rock of the siza of ona or one and a half inchas, fed into a hopper which surmounts the central portions of the pan, are readily reduced to a degree of fineness auitable for ordinary pan work. The discharge of this grinder or crusher is so mada that tha sand will pass directly beneath tha mullers as in ordinary pans, where it is subjected to the usual amount of trituration, and thoroughly amalgamated. When this process is completed, the pan may be charged with a suitahle quantity of water to act as a settler; and when ready for the "clean up," the mullers ara readily run up by a screw ent upon the central shaft, so as to ba entirely out of the way of the charge and the operator. By opening plngs in the usual way, the water, aftar being settled, is drawn off, and the sediment and amalgam removed as from ordinary settlers.

Tha dies and mullers ara of peculiar construction, so as to secnre a full and effective trituration and circulation of the pnlp. In addition to the mullers, and immediataly over tha periphery, thera is a circular groove in which is placed a series of halls of ahont thirty pounds weight, and extending entirely around the circumfereuce of the pan. By the action of the pan these halls are so set in motion, and, it is claimed, add greatly to the triturating powers of the pan. It is designed to operate the pan upon a framework of wood, which it is claimed is so secured and braced as to make it full as strong and as littla liable to get out of order as though it were constructed of iron; while it can he built at much less cost, and more cheaply transported. In a timber country the frame can be got out and put together upon the ground, thereby sacuring an important saving in both cost and transportation. This pan is the rcsult of much exparience and experiment in the separata use of the grinder and the pan; and the inventor, who is a thoroughly practical man, is quita sure that he has produced a combination of the two, with a settier, which will greatly reduca the cost of machinery in a quartz mill; and at the same time provide the prospector with a cheap and effective mill which he can readily move from point to point, as he may desire, for giving thoroughly practical tests to veins without the great expense usually attendant upon the erection of expensive experimental mills. This is the first and only one huilt by the inventor, who desires hereby call to it the attention of practical quartz men and miners. It may be seen and examined at the Golden State Foundry, on First street.

Congressional Visitors.—A Congressional party, consisting of the following persons, arrived in this city yesterday morning overland: Hon. Marcus L. Ward, Hon. John Hill and wife, Hon. Geo. A. Halsey, John Y. Foster, S. R. P. Heath, A. G. P. Segur, and Dr. C. Beach, all from New Jersey; Hon. N. G. Ordway, wife and two daughters, of Washington; Hon. A. F. Stevens and wife, Dr. B. F. Ayer and wife, and Frank Ayer, of New Hampshire; Hon. Chas. Knapp, H. W. Knapp and Miss Knapp, and Mrs. A. J. Wheeler, of New York; Hon. J. W. Ferry and Miss Ferry, of Michigan; W. H. Ferry and Miss Ferry, Max. Hjortsberg and wife, of Illinois, and Hon. J. W. Asper and wife, of Missouri. The entire party visited the Mechanics' Pavilion yesterday.

Culinary Vessel.—William Jones, of Clipper Mills, Butte County, exhibits upon Dewey & Co's counter a culinary vessel for cooking fruit or preserves. It consists of an outer and inner vessel secured together so as to leave a water and steam space between them. A weighted valve is placed over a hole which communicates with the water and steam space, by means of which a pressure of steam equal to the weight of the valve can be obtained inside the space and around the fruit, when the water is converted into steam, which greatly assists in cooking the fruit, and avoids the danger of being hurned.

Monster Blasts and Hydraulic Pressure Sluicing. How the Mountains are Giving Way.

From a correspondeut who has been visiting tha renowned ancient river gravel mines on tha Timhnctoo and Smartsvilla channel—tha richest in continuance, and the most extensive mines of the kind in tha State—and who was fortunate enongh to witness the great blast of last week briefly referred to in thesa colnmns, wa obtain the following intercsting particulars. He writes:

The Smartsville Company, a few days since, exploded in their mine 1,500 kegs of powder in one blast, with perfect snccess. Four main drifts were run into the hill, from which side and cross drifts wera run to tha extent of 1800 feet of drifting, under a bank ranging from 35 to 110 feet in height; tha cross drifts being so arranged as to bring the greatest force of the powder nnder tha highest part of the hill. Wires with electrical cartridge attached were placed through the drifts, so as to ignite the powder at thirty different points at the same instant, the powder being placed in the drifts by simply taking out the heads of the kegs and dropping the cartrage into the kag; then twenty feet of the month of each main drift was tamped, tha wire from each drift connected with a main wire leading to tha battery, distance 200 feet from drift. All heing made ready, Mr. S. D. Field, under whose supervision the whola has been arranged, applied the battery. A dull, rumhling sound is heard with a trembling of the earth, the mountain rises as much as fifteen feet, then falls, a pulverized mass of cement and gravel. A hank or hill 35 to 110 feet in height, 600 feet front by 350 back, is ready for washing.

This company have two flnmes three feet wide, half a mile each in length, which then empties into a fonr-foot flume of moro than a mile in length, all lined with rock. They use 6,500 ponnds of quick silver. Over $40,000 have heen expended in opening and placing first class improvements on the mine, a very large portion of which was taken out the first or partially opening clean-up. There are several very important mining improvements being prosecuted at and near Smartsvilla, the particulars of which I reserve for a future communication.

Smartsville is one of the most flourishing mining towns of the State. It is situated eighteen miles east from Marysville, the Nevada and San Juan stages passing through it daily. Tha main street, for near a mile, is built up with neat family cottages, each with a neat yard, which is beantified with rare plants and select fruits. The housea are uniform, and neatly painted, which gives everything acheerful and prosperons appearance, such as is seldom met with in the mining towns of California. The town contains two chnrches, two achool houses with one hundred and thirty scholars; Masonic and Temperance hall, two expresa offices; tha offices and principal places of business of several prosperous mining companies, viz: The Excelsior Canal Co., the Nevada Reservoir Ditch Co., the Blue Point Gravel Mining Co., the Smartsville Hydraulic Mining Co., the Pactolas Gold Mining and Water Co., and the Mooney Flat Gravel Mining Co.

The mines are sitnated a short distance from the town, extending nearly two miles in length, following an old river channel, which in many places is covered with a mountain of gravel and cement to the depth of from 40 to 500 feet hafore reaching the gravel of the old river, which is from 90 to 100 feet in depth. The working of this upper stratum is the principal work of the present; and to work it with profit, powder and water, with large and long flumes, are made to take the place of manual labor.

Average Human Weight.—The average weight of several thousand persons who hava been weighed on the Howe scalcs at the Pavilion during the present Fair, as per record kept, is 120 pounds. This is a low average, and is made to appear, no doubt, from the fact that a large portion of them weighed were females, and probably some who were not adults. Quetelet, who devoted much attention to this subjact, says that the average weight of adult males is 136.9-10 pounds, and the averaga height 5.6 feet.

"What did the Israelites do after they crossed the Red Sea?" askcd a superintendent of a Sunday school. "They dried themselves!" said a shrill-voiced little girl.

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ADVANCES MADE
On all kinds of Ores, and particular attention PAID TO
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Will negotiate the sale of Mines and receive consignments of Ores from Battle Mountain and all parts of the Pacific Coast. They will sell or work the Ores, as the consignors may direct. They guarantee to pay the highest prices for Gold, Silver, Copper, Galena, Lead, Zinc, Antimony and Tin Ores, on the shortest notice. They will make test or working Assays for prospectors at a very low figure. They will also receive orders and furnish Miners' and Farmers' Supplies, including machinery of all kinds, at the lowest prices. N. B.—All correspondence with us will receive prompt attention. 10v19-3m

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☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents
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DR. N. T. WHITCOMB,
Dentist,
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None cheaper and better on this coast—call and examine specimens
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3v19-3m N. T. WHITCOMB.

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
540 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

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The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
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[See following extract from the Globe of May 14, 1868.]
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Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19-6m

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15v12-3m SAN FRANCISCO.

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PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry,
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For sale—Mahogany, Spanish Cedar, and other Woods.
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SEAL ENGRAVER,
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Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.
6v16

Chicago Advertisements.

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Are authorized to receive advertisements for the Mining and Scientific Press at our lowest rates, and also for any Daily, Weekly or Monthly Newspaper or Magazine in America, at publisher's lowest prices. Estimates for any number of papers desired furnished gratis. 11v19

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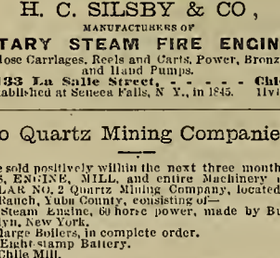
CHICAGO, ILL. 11v19-3m


H. C. SILSBY & CO,
MANUFACTURERS OF
ROTARY STEAM FIRE ENGINES,
Hose Carriages, Reels and Carts, Power, Bronze and Hand Pumps.
No. 133 La Salle Street, - - - - - - Chicago.
Established at Seneca Falls, N. Y., in 1845. 11v19 3m

To Quartz Mining Companies.
To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—
One Steam Engine, 60 horse power, made by Burden, Brooklyn, New York.
Two large Boilers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift-Pump, 6 inches, of superior make and finish.
280 feet of 5 inch Iron Suction Pipe.
One large Water Tank.
And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.
The Company having ceased operations intend selling off their effects as speedily as possible.
For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE R. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

Office of California Powder Works,
San Francisco, July 15, 1869.
NOTICE.
On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.
Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.
JOHN P LOHSE, Secretary.
5v19-3m 314 California street

WE CONSIDER THE MINING AND SCIENTIFIC PRESS the most valuable mining and mechanical newspaper issued in the United States. Dewey & Co., publishers, are also solicitors of foreign and American patents and conduct patent cases of every kind. We guarantee that all business confided to them will be carefully attended to, and we further believe that every miner, mechanic, and scientific man should have their valuable paper.—*Auburn Stars and Stripes.*

Milling and Metallurgy at White Pine.

The following items of information abont the mills and metallurgical works at White Pine, are from "G. B. E." whose communication has been somewhat delayed:

Several of the mills now in operation are about doubling their capacity, and changing from dry to wet crushing, as it is fairly proven that the ores of this district do not require anything more. The smelting furnaces are in full blast, as the shipment of lead to yonr city shows.

The water works are beginning to make an impression on the milling community. The water now flows into Hamilton, and nearly to the top of Treasure Hill. They offer to supply the nearest mill to the pipes at $1 per day per stamp, and have made an offer to the White Pine mill, in the center of Hamilton, at $1.50 per day per stamp. This is very reasonable.

Hon. Stephen Miller, of Philadelphia, has lately arrived here, and taken charge of the property of the White Pine M. & M. Co. The mill is well supplied with ore from the Charter Oak and Glazier mines of the company, and custom business. It is manipulated by Billy Wakefield, one of the pioneer millmen of Austin's palmy days, who gives general satisfaction to all with whom he comes in contact.

It is a hard job just now to get tests by mill process, of ore, as all the mills in the district are crowded with work; the Virginia mino being forced to haul their ore to the Centenary mill at Newark, a distance of twenty-five miles. This mine is now turning out a large quantity of fine ore. Pink District and the west side of the White Pine mountain, also avail themselves of the Centenary as they catch an opportunity. The Monte Christo mill is the only one idle in the district, and this should not be so, for they not only have quite a number of mines of their own, which furnish pay ore. but there is thousands of tons in their vicinity, desirous of milling facilities.

Condensed Steam Piston Packing.

This admirably simple and, as we are informed, effective invention,—exhibited at the Fair by the Chief Engineer, Mr. J. L. Constable,—was invented by Wm. Sullivan Gale, the assignor of Mr. Poillon, and consists in the simple discovery that if one of two moving surfaces in steam machinery, such as the face of the piston and the surface of the enclosing cylinder, be cut with a series of fine grooves, vertical or oblique to the direction of motion, and placed in close proximity—though not in actual contact to the other surface—that the steam insinuating itself between the opposing surfaces and into the grooves will, of itself, form such an obstruction to its further flow from either end of the cylinder as to make the piston practically steam-tight. The manifold advantages in cheapness of construction, non-liability to wear, and lack of friction, bid fair to revolutionize the art of piston packing, especially in pistons of comparatively small diameter and short stroke. The principle is equally applicable to packing for valve rod packing and the like.

NEW METHOD OF HANGING SASH WEIGHTS. Ezra Coleman exhibits, near the entrance to the Art Gallery, a new mode of hanging sash weights for windows, by which the cord and pulleys are concealed from sight. By the use of this device, the sash, upper or lower, may be made to rest at any desired point, the same as when hung in the ordinary way. The advantages of this device will be apparent to any one who may examine it. Patent applied for through the M. & S. PRESS AGENCY.

SAPIENT.—The *Scientific American* proposes to do away with laths, plastering, shingles, weather boards, cornices, panel doors, plank flooring, and to have cooking done by machinery. Inventive genius is to supply the substitutes.

GEO. E. ROGERS,
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17v17-qy12p E. P. HEALD, San Francisco.

OFFICIAL CLASSIFIED CATALOGUE.

Articles on Exhibition at the Seventh Industrial Exhibition of the Mechanics' Institute of the City of San Francisco, 1869.

CLASS XX.

SECTION 2.

Natural and Manufactured Products,

Comprising Flour, Wheat, Grain, Seed, Bread and Crackers, Fresh and Dry Maccaroni, etc., Spices, Mustard, Coffee, Chickory, Preserved Fruits, Fish, Meats, Vegetables, Pickles, Vinegar, Sugar, Candy, Syrups, etc.

34 46 J. C. Merrill & Co., 4 kegs of augar (samples).
52 62 Ravenna, Ghiradelli & Co.
71 87 Boston Cracker Bakery, crackers and cakes in great variety.
73 89 George E. Ball, samples of salad dressing.
202 230 Bowen Bros., Samples of groceries and liquors.
223 251 Boston Cracker Co., samples of cakes and crackers.
229 257 California Pickle Factory, samples of pickles and catsup.
229 258 California Pickls Factory, samplea of Bellmer's California aauce.
245 279 D. F. Adama, fruit vinegar.
341 393 Mrs. E. D. Hale, Stockton, 23 glasses of assorted jellies.
344 897 D. R. Provost, 8 packages of California grape wine vinegar.
312 360 Henry Lake, sample of salad oil.
361 416 J. S. Harbison, Sacramento, section boxea and case of White Mountain honey.
391 457 H. C. Hudson & Co., assorted spicea, oils, mustard cake, mustard and mustard oil, manufactured at tbeir mills in San Francisco.
443 511 H. J. Clayton, California chutney sauce, salad dressing and sandwicb preparations.
470 667 California Sugar Refinery, case of 9 samplea of sugar, including 13 cakea of A 1 sugar, 24 hottles of syrups, samples in barrels, ½ barrels and boxes, and syrup in kegs.
486 697 Marden & Myrick, samples of raw, roasted and ground coffee and spicea.
495 610 Dr. J. Streutzel, Martinez, 6 hottles of wins vinegar.
511 626 Coghill, Lyons & Co., samples of starcb, corn starch, maizena, satin gloss and superior.
514 629 D. Ghirardelli & Co., samplea of spicea, cocoa, muatard, chocolate, cream of tartar, coffee, broma, etc.
518 633 Brignardello, Macchivello & Co., farina, Italian paste and maccaroni.
635 660 Samuel Nesbit, samples of bread.
586 710 F. Kirsten, specimen of confectionery decoration.
675 848 John D. Feldbush, 22-pound loaf of German bread.

SECTION 3.

Comprising: Wines, Brandies and Vinous Products.

56 66 Llvingston & Co., case of German bitters.
135 169 John D. Robertson, 12 cases of bottled ale, porter, wine and cider.
144 175 M. Deschamps, California wines and liquora.
168 199 F. Putzman, Prusaian hitters in kegs and hottlca.
210 238 Lake Vineyard Wine Co., samplea of wines and liquors.
215 244 I. Landsberger & Co., samplea of California wines and liquora.
230 259 A. Bona, sample a of Squarza punch.
234 263 Phister & Kittleberger, aamples of punches of all kinds.
238 268 McMillan & Keater, syrupa, bitters, cordials, essences, etc.
275 314 C. J. Leiding, Sonoma, casea of wine.
320 373 L. Gross & Co., 6 dozen bottlcs of I. X. L. hittera.
320 374 L. Grosa & Co., 2½ dozen bottlea of O K hitters.
416 483 W. H. Rhea & Co., samples of whisky in kega and hottles.
431 498 Eberhardt & Lachmann, samples of sparkling California wine.
438 506 N. Keefer & Hollander, 196 Canal street, New Orleans, case of Malakoff bitters.
439 507 Frank Siebert, Nevada City, California wines and liquors.
362 620 F. & P. J. Cassin, samples of Cassin's grape root bitters and grape brandy.
485 695 Dr. J. H. Wood, Napa, case of Pearl Hock wine.
315 367 B. F. Headen, unfermented grape juice.
487 699 B. F. Headen, Santa Clara, 7 bottles of unfermented grape juice.
495 609 Dr. J. Strentzel, Martinez, 6 bottles of wine.
615 741 Remmel & Otterson, samples of Sonoma wine and brandy.
625 757 Vintage Brandy Co., 2 casks of brandy.
626 758 S. Marks, samplea of ale and porter, in wood and glass.
678 850 M. Descbamps, Travcler's Friend—9 hottles of wines and liquors.

CLASS XXI.

Miscellaneous Articles not Comprised in any of the Foregoing Classes.

Entry No | *No of Article.*

17 26 J. Armstrong, patent room-heater, using a common coal oil lamp.
27 38 Frank Eckenrotb, model of castle made with cards.
78 98 John Alsop, case of parasols.
92 112 Alfred Jeffery, case of stuffed birds.
153 184 Mrs. G. O. Perry, catbedral watch case, made from ant-eaten wood, found at Silver Lake, Amador county.
157 188 Alfred Weiner, collection of foreign postage stamps.
159 190 J. D. Barr, 2 cases of umbrellas and parasols.
162 193 Robert Varney, 2 charts of the sovereigns of England.
222 250 Dr. J. P. P. Vandenberg, case of tape-worms.
226 254 Holland Smith, Dcclaration of Independence in Chinese.
233 262 A. Meyer, specimen of silk and woolen scouring.
253 285 Hubert Burgess, 2 sets of the National system of drawing.
289 334 Fairbanks & Hutchinson, Baldwin's patent money drawers.
299 345 H. True & Co., exhibition of the working of Holmes' burglar alarm telegrapb.
301 348 Captain Blethen, letter from the Rev. John Wesley.
313 361 V. S. W. Parkhurst, 2 White's patent money drawers.
313 362 V. S. W. Parkhurst, U. S. Combination lock.
372 431 Miller & Loud, door with elastic springs.
411 478 J. S. Coleman, M. D., Stockton, samples of Dr. Coleman's tobacco antidote.
465 552 E. F. Lorquin, specimens of stuffed birds and animals, shells, etc., and samples of plumes for bats.
473 561 John F. Snow, specimens of glove and feather cleaning and dyeing, and specimeus of fur cleaning.
476 584 Dewey & Co., patent office and other models.
483 592 W. J. Stoddard, California wild cat, killed May 18th, 1869, within 18 miles of San Francisco. Weight, when killed, 27 pounds.
582 655 George Schuldt, root from a grave bed near Mount Hood, Oregon.
532 656 Georgs Schmidt, horn from the moose, eastern side of the Rocky Mountains.
538 663 H. L. Wempe, tin miniature fort, aquarian water power, etc., made hy exhibitor.
549 674 George Boyne—from Fiji Islands—fans, wigs, canoes, petticoats, bows and arrows, bamboo bottles, fishing nets, mats, spirit house, cannibal forks, priest's howl, baskets, fish books, war cluhs, nose flutes, chief's pillow, model of war canoe, cloth from fiher of mulberry tree, and sail needle—collected by exhihitor during a 3 years' residence in the Fiji Islands.
657 667 C. H. Campe, 3 drawings of elements of buman body.
568 688 G. H. Hopper, head of walrus or sea horse.
584 703 Thomas Allen, agent of C. P. R. R., Davisville, stick of wood with piece of iron imbedded therein, found at Davisville, C. P. R. R.
698 721 D. N. Robinson & Son, specimen of Alaska sponge.
609 735 J. F. Pennell, specimen of jack-knife work.
620 752 George B. Hess, ball of tin foil.
644 782 A. Geehandelaar, cbart of the flags of the different Japanese princes and their annusl incomes.
648 816 R. L. Harris, $5 piece crushed hy the first engine on the last rail, May 10th, 1869.
655 828 Miss Ella Cornell, 1 air castle.
448 616 H. C. Door, sample of Chinese medical preparations.
91 111 Ephraim Vorhea, combination lock, California manufacture.
692 864 Kittredge & Leavitt, combination hank vault and safe locks, California patent.

CLASS XVI.

SECTION 1.

OIL PAINTINGS.

Toby Rosenthal:
1 Affection's Last Offering (exbihited hy C. Kohler).
2 The Joys and Sorrows of Spring (exhibited by J. Rosenthal).
3 The Exile's Return (exhibited by J. Rosentbal).

Samuel Walker:
4 Evening: Helmet Rock, near the Entrance to the Golden Gate.
6 Salmon Fishing in Scotlond, witb Ben Nevis in the distance.
6 Portrait of Mr. Duncan.
7 Portrait of Mr. Middleton.
8 Childhood.
9 Portrait of James Parsons.
10 Portrait of a Little Girl.
11 The Head of a Rahhi.
12 The Head of a Boy.
13 The Death of the Rahbit.
14 Gipsy Queen.
15 Venus, Cupid and Adonis: a study for a large painting.
16 Beach Scene.
17 Portrait of Samnel Walker.
18 Wreck.
19 Morning; Mount Vesuvius in the distance.
20 Water Nymph.
21 Fish Girl.
22 King Charles Spaniela after the Chase.

G. J. Denny:
23 A Race for the Prizs.
24 Top Schooner in a Cyclons.
25 Wreck of the Viscata.
26 The Rescue Towing a Wreck.
27 Pilot Boat No. 2 speaking the Pens acola.
28 Farralone Islands.
29 Morning in the Sierras.
30 Sunset: Golden Gate.
31 Ship "bove to" for a Pilot.

John Wilson:
32 Loch Lamond.
33 River Findhorn.
34 Afternoon.
35 Ships on Fire.
36 Off Cape Horn.
37 Bothwell Castle.
38 Edinburgh.
39 Lockinn.
40 Lockgone.
41 Summer Afternoon.

Mary Keller:
42 Byron.
43 A Lady (portrait of).
44 Cantelope.
45 Magnolia.

H. W. Severance:
46 View in the Sandwich Islands.

George H. Burgeas:
47 Portrait.
48 Portrait of Adeline Patti.
49 Looking Down Yosemite Valley.
50 On Frazer River.
51 View in Humboldt.
52 Portrait of a Lady (pencil drawing).
53 Portrait of a Lady (pencil drawing).
54 Study on San Antonio Creek.

Robert E. Ogelby;
65 Oakland City from above Adams' Point.
56 Part of the old Dungreu Castle.
57 Poacher and Betrotbed in Prison.
58 Lake Maggiora.
59 Scene in the Sierras.

Goodall & Nelson:
60 Propeller Mouterey.
61 Tow-boat Wizard.

William Briggs:
62 Mount Tamalpais from San Quentin.
63 Minne-ba-ba.

George Peter;
64 One oil painting.

Albert M. Brooks:
65 Still Life.
66 Still Life.
67 Portrait of Colonel Larrabee.

May Wentworth:
68 Portrait of a Lady.
69 Portrait of a Lady.

J. Solomon:
70 Two old oil paiutinga.

Jones & Wooll:
71 Valley Forge.
72 Parental Affection.

C. Bailey:
73 Mount Hulekala, Sandwich Islands.

Miss E. Isabel Lindsey:
74 Indigene (in pastell).
75 Martha (in pastell).
76 Mary (in pastell).

Samuel M. Brooks:
77 Still Life: The Larder.
78 Still Life: Crab and Codfish.
79 Portrait of Dr. Geary.
80 Portrait of C. H. Larrabee.
81 Portrait of Charles M. Leavy.
82 Portrait of Mrs. La Mere.

James A. Kerr:
83 Chamois Hunter of Tyrol.
84 Fishes Just Caught.
85 Deserted Mill.
86 Near the Coast of Scotland.
87 Scenery in South of Ireland.

Norton Bush:
88 Donner Lake.
89 Lake Tahoe.
90 Straits of Carquinez.
91 Tropical Sketches.
92 Castle Peak.
93 Glimpse Tropic Land.
94 Bay of Panama.
95 American River.
96 Chagres River.

Hannah Millard:
97 Study in the Woods.
98 Otsego Lake.

F. Holtzman:
99 Harvest Scene.

Mrs. S. A. Clisly:
100 Three paintings in water colors (flowers and leaves).

Lai Yung:
101 Portrait of a Gentleman,
102 Portrait of a Lady.

O. de Beudlehen:
103 Scene in Northern Alaska.
104 Summer Scene in Northern Alaska.
105 Summer Scene in Northern Alaska.

M. L. McDonald:
106 Lake Tahoe.

Miss Clara M. Root.
107 Portrait of a Young Lady, painted in China, from a photograph.

W. Bolza:
108 Two oil paintings.

Helen A. Tibbets:
109 Four water-color paintings of autumn leaves.

James Lee:
110 Kosciusko's Monument at West Point.

Frederick Whymper:
111 View in Alaska (water-color).
112 View in Alaska (water-color).

George Howes & Co.:
113 Ship Black Hawk.

Miss Emma Blanche:
114 In Everbart Woods—Kingstonian style.
115 On the Brandywine—Kingstonian style.
116 By the Sea-shore—Kingstonian style.
117 The Bridge Over the Creek—Kingstonian atyle.
118 On the Erie Canal—Kingstouian style.
119 Two Wreaths of Flowers (water colors).
120 Seven paintings—birds and flowers—executed with a poonah brush.

STATUARY.

P. Mezzara:
Works composed and executed in San Francisco:
121 Goddess of Music.
122 Bust of Wm. Alvord.
123 Bust of Mr. L. P.
124 Bust of Mrs. L. P.
125 Bust of von Humboldt.
126 Bust of Mr. Parker.
127 Bust of Mr. L. L. Robinson.
128 Group: Dead Child and Dog.
129 Medallion of Mrs. ——.
130 Medallion of Mr. A. Cazali.
131 Medallion of Mr. F. L. A. Pioche.
132 Medallion of Judge Field.
133 Frames of Cameos, taken from life.

Leon R. Myers & Co.:
134 Cuordoglia.
135 Samuell.
136 Fiducia in Dio.
137 Resurezione.
138 Amonino.
139 Bust of Napoleon.
140 Hope.
141 Bust of Frankland.
142 Urna.
143 Psyche.
144 Madaline.
145 Preghiera.
146 Amorino,
147 Prayer.

PHOTOGRAPHS.

Thomas Houseworth & Co.:
Photograpbic Views of California Scenery—size, 22x28 inches:
148 Yosemite Falls, from the Mariposa Trail.
149 Catbedral Rock, 3,000 feet bigh, Yosemite Valley.
160 Lower Cathedral Rocks, 2,600 feet high, Yosemite Valley.
151 Yosemite Fall, 2,634 feet high.
152 Yosemite Fall, 2,634 feet high—front view.
153 Sentinel Rock, 3,270 feet, Yosemite Valley.
154 Mirror Lake and Reflections, Yosemite Valley.
155 The Vernal Fall, 350 feet high, Yosemite Valley.
166 The Sentinel, 315 feet high, Big Treea, Calaveras Grove, California.
167 The Original Big Tree, 32 feet diameter, Calaveras Grove, California.
158 The fallen tree Hercules, 325 feet long, Calaveras Grove, California.
Oriental—size, 22x28 inches:
159 Harbor of Nagasaki, Japan.
160 The Bund, Nagasaki, Japan.
161 View near Nagasaki, Japan.
162 Panorama of Yokohama, Japan.
163 Field View near Yokohama, Japan.
164 Temple in Tycoon's Burial Ground, Yeddo, Japan. Size, 16x20 inches;
165 View in Ka-ding, 30 miles from Sbangbai, Cbina.
166 The Stone Pagodas, Loo Choo, China.
167 The Pagoda at Loong Koong, General Ward's city, China.
168 Temple in the Grand Cemal at Woosuh.
Stereoscopic and Album Views—China:
169 One frame, 30 photographs, Pacific Railroad Views; Views of Principal Buildings in San Francisco.
170 One frame, 30 photographs, Hydraulic, Placer and Quartz Mining Views; Views of Lake Tahoe, Big Trees, Yosemite, Cbinese and China.
171 One frame, 12 pbotographs of the Eclipse of August 7th, 1869.

William Shew:
172 Plain Photograpb of Hon. E. Casserly.
173 Retouched Pbotograph of Hon. John Conness.
174 Retouched Photograpb of Hon. D. Broderick.
175 Colored Photograpb of Hon. T. H. Selby.
176 Retouched Photograph of Dr. Bellows.
177 Retouched Photograph of Thos. Starr King.
178 Retouched Photograph of General Sumner.
179 Retonched Photograph of General John A. Sutter.
180 Colored Photograph of General McClellan.
181 Retouched Photograph of Judge Field.
182 Retouched Photograph of Rev. Mr. Wyatt.
183 Colored Photograph of Miss Bateman.
184 Colored Pbotograph of Miss Annette Ince.
185 Colored Photograph of Miss Weston.
186 Colored Photograph of Miss Alice Kingabury.
187 Eight Colored Photograpbs of Ladies and Gentlemen.
188 Eight Ivorytypea of Ladies and Gentlemen.
189 Five frames of Small Cards.
190 Four frames of Cabinet Cards.

C. E. Watkins:
191 Nortb Dome, Yosemite Valley.
192 Mount Starr King, Yosemite Valley.
193 El Capitan, Yosemite Valley.
194 Grizzly Giant, Mariposa Grove.
195 Section Grizzly Giant, Mariposa Grove.
196 Washington Column, Yosemite Valley.
197 Mirror Lake, Yosemite Valley.
198 Cape Horn, Columbia River, Oregon.
199 Falls, Columbia River, Oregon.
200 Falls, Columbia River, Oregon.
201 The Sentinel, Yosemite Valley.
202 Cathedral Rocks, Yosemite Valley.
203 Pompompiares, Yosemite.
204 The Catbedral Rocks, from the Valley Bend, Yosemite Valley.
205 The Dome, Royal Arches, Washington Column.
206 Castle Rock, Columbia River, Oregon.
207 Scene on the Columbia River, Oregon.
208 Scene on the Columbia River, Oregou.
209 Cape Horn, Columbia River, Oregon.
210 Yosemite Valley, from Mariposa Trail.
211 Pohouo, Bridal Veil, Yosemite Valley.
212 Mirror View of North Dome.
213 Tasayac, The Half Dome, Yosemite Valley.
214 The Garrison, Cascadea, Columbia River, Oregon.
215 Rooster Rock, Columbia River, Oregon.
216 Eagle Creek, Cascades, Columbia River, Oregon.
217 Cape Horn, Columbia River, Oregon.
218 View down the Valley Yosemite.
219 The Yosemite Valley from Inspiration Point.
220 The Vernal and Nevada Fall, Yosemite Valley.
221 The Tooth Bridge, Cascades, Columbia River, Or.
222 The Passage of the Dalles, Columbia River, Oregon.
223 Mount Hood and the Dalles.
224 First View of the Mine, New Almaden.
225 The Hacienda, New Almaden.
226 Islands in the Columbia Cascades.
227 Mount Hood, from near Vancouver, Columbia River,
228 The Rapids, Cascadea, Columbia River, Oregon.
229 Upper Cascades, Columbia River, Oregon.
230 Albums, etc.

— Vaughan:
Pbotographs retouched in oil, life size;
231 Judge Hastings.
232 Mr. Gashwilder.
233 Mr. Mosheimer.
234 Mr. Lockhead and lady.
235 Mr. Vaughan.
236 Four Life-size Photographs, ratouched with India ink.
237 Twelve Half Life-size Photographa, ratouched in water colors.
238 Two Ivorytypes.
239 Two Sun Pearls.
240 One Miniature on Porcelain.
241 Crayou of Child Kissing Reflection in Mirror.
243 Eagle Base Ball Club (cards).

Bradley & Rulofson:
244 One Large Portrait of Miss Pidwell, in water colors.
245 Group of 9: The Oxford Crew in the play of Formosa, in water colors.
246 Group of 5: Captain and Officers of City Guard, in water colors.
247 Group of 4: Misses De Ro and Klinkeustein, in water colors.
248 Group of 2: Missea Chapman and Trask, in water colors.
249 Portrait of Miss Taylor, in water color.
250 Portrait of Miss Houston, in water color.
251 Portrait of Mrs. Howith.
252 Portrait of Mrs. Rogers (Charlotte Thompson), in ink.
Portraits after Rembrandt:
253 Portrait of Miss Hatch.
254 Portrait of Mrs. Dr. Howard.
255 Portrait of Mr. F. Marriott.
256 Portrait of Miss Emily Melville.
Portraits in ink:
257 Captain Foster.
258 Captain Eldridge.
259 L. Friedlauder.
260 Martin Tidball.
261 Captain Cavarly.
262 Mr. Bullock.
263 Two frames Rembrandt and Marin Photographs.
264 Two frames Rustic Cabinet Photographs.
265 Eight frames Rustic and Plain Cartes de Visite.
266 Twenty-four Sun Pearls.
267 Group of 13; Chinese Embassy with Burlingame.
268 Group of 15: Officers of Templar Lodge, I. O. O. F.
269 Three Family Groups, Rustic; 9 Cabinet Photographs, framed; Showcase containing Rembrandts, Cabinets, 30 Sun Pearls and Miss Tucker on Clock Dial, etc,

Dr. J. H. Wood:
270 Two Photographic Views of Napa Soda Springs.

George G. W. Morgan:
271 One Pbotograph, Capitol at Washington.
272 One Photograph, Frescoes of Dome of Capitol at Washington.

Mrs. M. H. Litchman:
273 Photographed retouched in Oil.

Bayley & Winter:
274 Nineteen Photographs from line engravings:
276 1 To the Crimea War.
276 2 The Game-keeper's Daughter.
277 3 Shakspeare's Courtship.
278 4 A Piper and a Pair of Nut-crackera.
279 6 Christ Weeping Over Jerusalem.
280 6 Sheep Shearing.
281 7 Sheep Washing.
282 8 Many Happy Returns of the Day.
283 9 The Departure.
284 10 First Lesson.
285 11 The Return.
286 12 The Saved.
287 13 Picking Out the Lambs.
288 14 Sheep to Market.
289 15 Returning from Hawking.
290 16 The Prison Window.
291 17 The Emigrant's Letter.
292 18 Shoeing.
293 19 The Return Home from the Crimea War.
Four large Photographs in India ink:
294 Thomas Maguire:
295 Mr. Dusenberry.
296 Mrs. Hunter.
297 Daniel Gorham.
Seven large Oleographs (new style):
298 R. Winter.
299 W. F. Bayley.
300 Mr. Vanderslice.
301 Mr. Mansell.
302 Senator Carl Schurz.
303 Mr. Davenport.
304 Miss Annie Pierce.
305 Three Square Pictures, Groups, of the National Guard.
306 Two Squars Pictures.
307 Mrs. Bowera as Queen Elizabeth (new style).
308 Misa Jonea (water colors).
309 Two 16x20 Plain Photographs.
310 Senor DeVivo.
311 Senor Mancusi.
312 Twelve 13x16 Oleographs.
313 Four 13x16 Plain Photographs.
314 Seventeen 8x10 Plain Photographs.
315 Eighteen Cabinet Cards.
316 Thirteen Porcelain Pictures.
317 Four frames, containing various Cartes de visite.

PENMANSHIP.

J. P. Dwyer:
318 Specimens.

California Business University:
319 Four Frames of Penmanship.

Miss E. M. Horne:
320 One Pen Drawing.

D. C. Taylor:
321 Two Frames of Penmanship.
322 Two Pen Drawings.

L. W. Ford:
323 One Specimen of Penmanship.

Pacific Business College:
324 Seven Frames, Specimeus Penmanship and Drawing.

ARCHITECTURAL DRAWING.

R. M. Williams:
325 One Architectural Drawing.

J. E. Wolfe:
326 Mayfield Chapel.
327 Mr. Lambert's House at Haves Valley.
328 Residence of H. H. Bancroft.
329 Front View of Second Baptist Church.
330 Elevation Third Story.
331 Side Elevation.
332 Church Elevation.
332 Chapel Elevatiou.

CRAYON AND PENCIL DRAWINGS.

Miss Ella Robinson:
333 Drawing of California as it was supposed to be in 1605.

E. T. Dudley:
334 One Crayon Drawing.

Miss Effie Case:
335 One Crayon Drawing.

Cecelia Sonnenaberg:
336 One Crayon Drawing, Moonlight Scena.

ENGRAVINGS.

David Saxton:
337 One Steel Engraving, The Burial of Latano.

Mrs. H. S. Huntington:
338 One Medley Picture.

PHOTOGRAPHS EXHIBITED BY N. M. KLAIN.

339 Synagogue on Mason street.
340 Synagogue Emanuel, Sutter street.
341 Merchants' Exchange, California street.
342 Russ House, Montgomery street.
343 Parker's Monument in Odd Fellows' Cemetery.
344 Several Monuments in Lone Mountain Cemetery.
345 Murphy, Grant & Co's Building, corner Sansome and Bush streets.
346 Pleasure Yatch of Eugene Kelly.
347 Black Point.
348 Presidio.
349 Angel Island,
350 Angel Island Hospital.
351 Oriental Block.
352 Residence of N. P. Cole, Pine street.
353 Residence of Mr. Pickering, Bush street.
354 Residence of Col. Taylor, Bush street.
355 Residence of James Laidley.
356 Residence of Mr. Lambert, Hayes Valley.
357 Residence of Mr. T. P. Pierce.
358 Risdredge & Leavitt's Pioneer Iron Works.

Charles Nahl:
359 Oil Painting, The Love Chase.
360 Oil Painting, Indian Girl and Calf.

P. Mezzara:
361 Two Oil Paintings, Turkish Scenes.

Lawrence Peters:
750 Two Oil Paintings (Portraits).

SECTION 2.

Comprising Sculpture, Staining on Glass, Penmanship, Photography, Fine Steel and Wood Engravings, Chromo Lithographs, etc.

Entry No. of No. Article.		
69	85	Locan & Co., 2 cases of bronze statues and ornaments, perfumery, a.-hums, work boxes, fancy articles, etc.
181	212	Mahon & Boyle, specimens of glass-staining and bending.
324	376	R. A. Swain & Co., 2 cases of China, glass and fancy ware.
407	473	A. A. Rosenberg, 2 bronze statues.
464	651	Thomas O'Neil, samples of stained and enteglass.
467	554	Martin L. Haas, 2 show cases of Parisian gooda and fancy articles, and samples of perfumery.
671	691	R. H. Rutherford, 3 photoscopes.
22	793	James Lick, 9 ornamental frames.
22	794	James Lick, 2 gilded glass plates.
22	795	James Lick, gilded clock case.
66	811	Joseph Norton, 1 Byzantine Mosaic and 6 Venetian mirrors.
649	820	D. L. Perkins, Sherman Island, photograph of California fruits and vegetables.
654	826	Joseph Silver Mitchell, Sacramento, marble picture frame.
664	827	Joseph Silver Mitebell, Sacramento, inlaid ivory bodkin.

SECTION 3.

Comprising Sign Painting, Lettering, Ornamentations in Oil and Water Colors, Scenic Painting, Staining on Wood, Graining, etc.

227	255	B. J. DeWolf, ornamental sign.
257	289	Jas. W. Luny (13 years old), ornamental sign on glass.
302	349	George A. Brush, imitation of a California laurel door.
302	350	George A. Brusb, imitation of a black walnut door.
327	378	Noble & Gallagher, ornamental sign.
327	379	Noble & Gallagher, 4 ornamental glass letters and glass sign.
405	471	John W. Cherry, specimens of sign painting on glass.
472	660	D. Levy, ornamental sign.
600	723	Louis Tomsky, specimen ornamental sign paintiug.
41	806	F. Pellegcine, samples of fresco painting.

SECTION 4.

Wax Work, Hair Work, Bead and Moss Work, Artificial Flowers, etc.

12	19	Mrs. W. S. Chandler, specimens of wax work donc hy Indians in Mexico.
44	55	Miss Kate Mitchell, picture and frame made from California leaves and flowers.
80	97	Mrs. S. A. Sandersou, specimens of moss work.
786	104	D. Denechaud, artificial garden.
115	147	Miss Emma Blacke, wax-work cross and wreatb.
139	173	Mrs. F. B. Medena, 2 shell wreaths.
173	204	Miss Nellie Welty, 4 pieces of bead-work.
175	206	Miss Mary Pennie, wreatb of California polson oak.
208	236	Mrs. A. D. Young, smbroidered picturs made with pins.
268	302	Wm. Johnson, wreath of wild flowers in frame.
273	312	Mrs. M. E. Doherty, 2 cases of human hair and perfume.
300	346	Mrs. G. Coffin, wroath of sea moss from Alaska.
430	497	Mrs. H. W. Bennet, bridal houquet of wax flowers, 1 cross (of wax), large houquet of wax flowers (in frame), houquet and wreath of autumn leaves (in wax).
433	500	Mrs. Benj. Haynes, case of wax fruit.
469	556	Mrs. Benj. Haynes, case of pond lilies (wax).
699	722	H. Kahn, show case of artificial flowers.
693	728	Mrs. P. A. Duncan, hair wreath.
612	738	Mrs. J. B. Levet, basket of wax flowers.
814	740	Mrs. W. J. Silver, shell cottage.
634	764	G. Holca, baskct of wax flowers.
643	781	Mrs. George Ellis, wreath of Santa Cruz moss.
1	786	Miss Winifred White, picture of sea moss in oval gilt frame.
21	792	Mrs. Swanton, 5 frames of moss and shell work.
27	797	Mrs. Richard Brown, frame of skelcton leaves.
34	800	Mrs. Robert Taylor, frame of California dried flowers.
36	803	Mrs. John J. Daggett, 4 sbell frames.
38	804	Miss N. Reynolds, frame of wax flowers.
42	807	Mrs. Bcnj. Haynes, 3 frames of wax flowers.
42	808	Mrs. Benj. Haynes, framc of moss work.
63	809	Mrs. E. Tracy, 2 frames of bead-work.
64	810	Miss N Reynolds, hair wreath in framo.
60	813	Mrs. E. Tracy. 2 bead embroidered pictures in blue and gold—No. 813 (Night) and No. 814 (Morning).
660	833	Miss Florence Rumsey, shell and moss wreath in frame.
672	845	Mrs. W. J. Davis, moss wreath and shell cross in frame.
236	265	Mrs. C. Cook, 5 frames of hair device work.

NOTE.—Any error or omissiou occurring in this list will be remedied on application to the Entry Clerk in the Pavilion.

INTERESTING TRIALS!

SHOWING THE

Relative Strength of Giant Powder, Gun Cotton and Black Powder.

The most interesting, and especially important trials for the Military Engineer with Giant Powder, against wooden objects, are those conducted by the Military Engineer Corps of the Royal Prussian Garde Pioneer Battalion against palisades. The results of these trials are taken from a certified copy of the official protocol and comparisons of the effect of Gun Cotton in blasting, having taken place in Vienna, conducted by the Military Corps of Engineers returned from Schleswig-Holstein:

A.—Blasting of obstruction; palisades being twelve inches diameter; round posts, eleven feet long, three feet in the ground and three inches apart.

1.—GIANT POWDER.—FIVE pounds placed in a single bag, hung two inches above the ground.

RESULT.—Three palisades broken off close over the ground, and an opening produced of three feet eleven inches in width.

2.—BLACK POWDER.—FIFTY pounds in a box placed at the foot of the palisades.

RESULT.—Two palisades broken, one close to the ground, and the other one and one-half feet above the ground, and two palisades pushed somewhat to the side; width of opening produced, three feet two inches.

3.—GUN COTTON.—A barrel with TWENTY-FIVE pounds placed against the palisades; firing by electricity.

RESULT.—Four palisades broken close to the ground; of the next two some splinters broken off; opening produced, three feet and seven inches. Hereby must be remarked that these last palisades were placed close together, with an earth-bank thrown up against the same on the other side, a circumstance favorable to the result.

B.—Blasting of a double row of palisades close together with an earth-wall thrown up against the same. Palisades pointed, twelve inches in diameter, eleven feet long, three feet in the ground; second row, or breast palisades, from six to eight inches thick.

1.—GIANT POWDER.—SEVEN pounds, packed as before, simply in a bag.

RESULT.—One breast palisade broken off three and a half feet above the ground, two pointed palisades broken off two feet above the ground; of a third pointed palisade there remained but a small piece standing; opening produced, three feet.

2.—BLACK POWDER.—SEVENTY pounds in a strong box placed against the palisades on the ground.

RESULT.—One pointed palisade broken off two feet, and one breast palisade two and one-half feet above the ground, two palisades pushed to the side. The opening made was not passable, the palisade burning faintly.

3.—GUN COTTON.—Pointed palisades; twelve inches diameter; twelve feet long and three feet in the ground; breast palisades from five to six inches diameter. For blasting were taken two barrels, each containing TWENTY-FIVE pounds GUN COTTON, placed fifteen feet distance from each other, and separated by a two-feet bigh earth-wall; simultaneous ignition by electricity.

RESULT.—Each barrel tore away three pointed palisades, with the breast palisades behind them, which produced one opening of four feet, and one of four feet six inches.

The result of these six trials is:

First—The effect of FIVE pounds Giant Powder, by single obstruction palisades, placed loose in a single bag, is equivalent to FIVE TIMES the weight of gun cottou, and TEN TIMES the weight of black powder, provided the two latter materials are put in bases with a strong resistanee.

Second—Against defective palisade works, SEVEN POUNDS of Giant Powder, in a loose enclosure (a bag) have a much stronger effect than TEN TIMES the quantity of black powder in weight inclosed in strong boxes, but a little less effect than TWENTY-FIVE POUNDS gun cotton in a package with strong resisting powers.

C.—A changed trial of the before described Prussian defensive palisade works.

The enormous but comparatively local effect of the GIANT POWDER proved in the former trials that a much more favorable result would be obtained by a more proper distribution of the GIANT POWDER to the nature of the object to be operated upon. For this reason the following trial was made:

A common gas pipe, 12 feet in length and 1½ inches in diameter, was filled with EIGHT AND A HALF POUNDS OF GIANT POWDER, soldered at one end and closed with a common cork at the other. This gas pipe was hung against the palisades horizontally, 2½ feet above the ground.

The GIANT POWDER was exploded by a cap and fuse. The explosion was an instantaneous one, notwithstanding the considerable length it was distributed, and fired only at one end.

RESULT.—Three palisades, with the breast palisades behind them, broken off at one and a half feet above the ground; of a fourth, only a small part remained standing; three others fell over as soon as touched, and two more broke off and fell to the ground on being pushed. One breast palisado broke off one and a half feet above the ground. There remained standing in the length of 12 feet only three palisades and three breast palisades.

This trial is very convincing proof what enormous results can be arrived at when the GIANT POWDER is properly applied. If TEN POUNDS had been used, very likely the whole length of 12 feet palisades would have been knocked down.

Very characteristic of the fearful effect of the GIANT POWDER was the circumstance that the gas pipe was broken into numerous very small pieces, and which had such enormous velocity that they penetrated the palisades like shot.

In regard to the former trials and those made afterwards, a strong inclosure, in which the GIANT POWDER was placed, was hardly necessary. The GIANT POWDER distributed in a canvas hose would have been sufficient.

The probability to do away with the necessity of confining the GIANT POWDER in strong vessels is of very great importance in using it for military purposes. In this way useless weight is not alone saved, but the danger avoided to the friendly troops being wounded by flying pieces.

This danger was especially a very great obstacle in the Austrian Army, from using the barrels made of Bessemer steel.

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August 2, 1869. 6v19-1m

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Samuel Crim,	Henry L. Davis,
Charles J. Deering,	Donald McLennan,
Charles M. Plum,	Moses Rosenbaum,
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S. Heydenfeldt,	F. S. Wendinger,
Wm. Blackwood,	Henry C. Lee.

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A delicate parcel to be forwarded by rail—A young lady wrapped up in herself.

When a pretty girl falls in love with a lucky Irishman, her heart always goes pity Pat.

Why are kisses like the money taken at he door? Because they are the receipts of the fair.

Standing Upon Trifles.—Ladies wearing gaiter boots with two-bit pieces for heel taps.

Babies are the coupons attached to tbe bonds of matrimony. The interest is due at random.

Some politicians in San Francisco are like rivers—their moutbs are larger than tbeir beads.

Action should follow thougbt. No farmer can plow a field by turning it over in his mind.

Why can a bald-headed negro not join the colored Masons? Because he is blackbald all the time.

Ready to Fight or Pray—The Nortb German army has 159 chaplains—all high-pressure pulpit pounders.

A Cockney convert to Mormonism, who is disgusted with Brigham Young, says that poteutate is vive-wiferous.

What is the difference between General Grant and an old boot? One is sworu in and the other's worn out.

Utah has been shocked by an earthquake. The United States have been shocked by Utah for a long time.

The attempt to amalgamate Celestial China with Hibernian earthenware bas produced nothing but bad jars in this city.

Why are some of the pictures exbibited at the Fair like tbe prattle of innocent children? Because they are artless and witbout design.

Ike Partington's last trick was to throw his aunt's gaiter into a dirty alley and call the old lady down tbree fligbts of stairs to see an alley-gaiter.

"Mammy" said a precocious little boy, who, against his will, was made to rock the cradle of his baby brother; "if the Lord has any more babies to give away, don't you take 'em."

Jones says the ladies who come into bis store, examine his goods and leave without buying anythiug, are like a valuable class of surgical appliances; they are counter irritants.

A Base Use of Bullion.—A fashionable young lady was seen walking down Montgomery street yesterday with five-dollar gold pieces on the tips of the heels of her boots.

"How did you manage to get along in Paris without knowiug the French language?" inquired a gentleman of Mrs. Shoddy. "Oh, we had an *interrupter* with us," replied the old lady.

Jones says some of the pictures exhibited at the Fair aro well adapted for the decoration of anti-ritualistic churches, because they do not represent anything on the earth, in the heavens, or in the waters under the earth.

A Countryman walking along tbe streets of a town, found bis progress stopped by a close barricade of timber. "What is that for?" he inquired of a person in the street. "Oh, that's to stop the cholera." "Ah! I have often heard of the Board of Healtb, but I never saw it before."

A wealthy heiress of Madison Avenue, New York, has gone and married one of Bryaut's Minstrels, whereat all the *bon ton* of New York are iu a fever of excitement. Zounds! If San Francisco were to make a sensation over every young lady who makes a fool of herself in the matrimonial liue, even the *Alta* would not be able to print all the items.

A Powerful Medicine.—A curious doctor, who does not live very far from the corner of Post and Kearny streets, has compounded a most valuable medicine for ladies who prefer to wear the sable robes of widowhood, rather than go to grass. One of this class was recommending the compound to her dearly beloved hubby, and assured him that it was praised to the skies by the ladies. "Well, it may be," said he, "for many a poor devil it has sent to the skies to praise it."

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Foundry and Iron Works.

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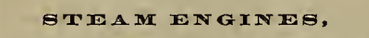

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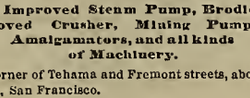

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AMALGAMATOR AND SEPARATOR,

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STEAM ENGINES,

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Pump, Pipe and Sheet Iron Work of every kind.

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(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

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GENERAL DEPOT:

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This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrotula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the vellous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases wh re a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain remedies which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the physician only can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

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They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

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— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869 By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

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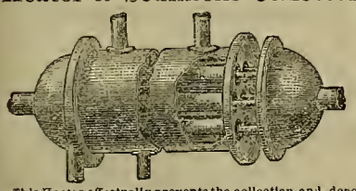

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2iv17-qy

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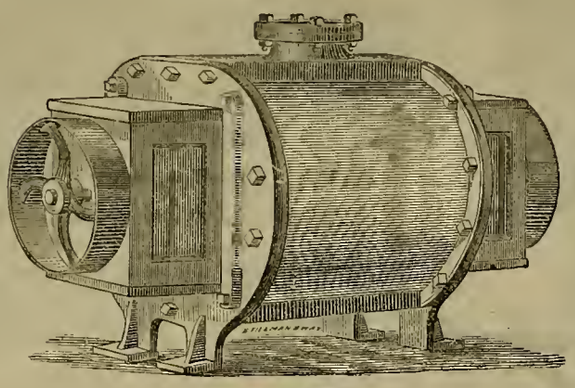

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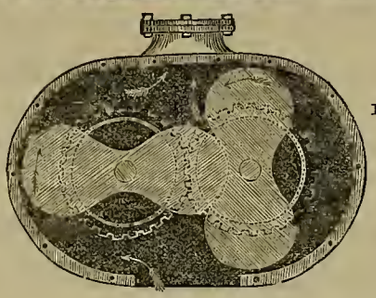

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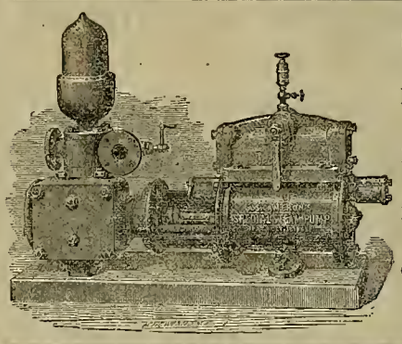

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13v12 **President.**

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For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

HAIR DRESSING,

nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.

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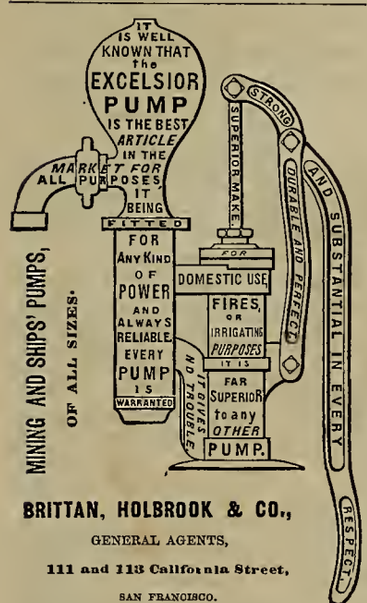
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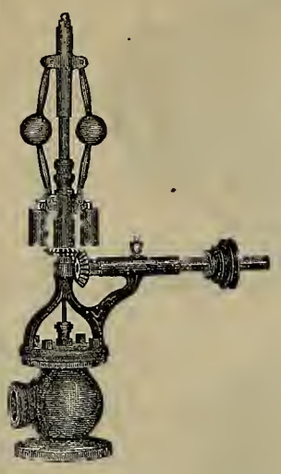

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To the miner, farmer and mechanic—the three great interests that form the base and ground-work of all our prosperity—this paper should be considered as almost indispensable. We wish the Press boundless success in the future.—*Placer Herald.*

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, OCTOBER 23, 1869. VOLUME XIX. Number 17.

APPARATUS FOR SEPARATING GOLD.—Daniel F. Hawkes, of Timbuctoo, Yuba County, has just received a patent through this office on an improved apparatus for separating gold from the sand and gravel, in the process of cleaning up flumes in hydraulic claims, tailings, etc., and which can be employed at any place where the pan is ordinarily used. It consists of a square box or tank, having a vertical sliding gate, which moves up and down across its center, dividing the tank, when down, into two sections. The tank is charged with quicksilver to a convenient depth, and the gate placed so that the lower edge penetrates below the quicksilver surface. The water and tailings or dirt to be washed are received into this tank on one side of the gate, and pass down under the gate through the body of quicksilver, being freed in its passage of all gold, amalgam and quicksilver, while the water, sand and gravel are discharged on the opposite side at a lower point than where it enters.

It is a well devised apparatus for saving both time and gold. Mr. Hawkes is a practical miner, and has made other improvements worthy the attention of miners, who can learn particulars of his invention by addressing him.

IMPROVED STEAM ENGINE.—W. H. T. Clark, San Francisco. This invention presents several novelties, one of which is the employment of an elongated cylinder for a piston, the packing rings being attached to the onter cylinder near the center, and stationary, while the piston moves through them, the arrangement being similar to that of a pump, for which letters patent have already been granted to the same inventor. The cylinder is made with double walls to save heat, and a space is left around the piston, between it and the inner wall, so that when the steam is admitted to the cylinder it fills all the space to the packing rings, and as the piston is thus all heated at first, there will be no new portions to uncover and thus diminish the expansive force of the steam after it begins to operate expansively. The valve is also formed with double walls, to prevent the exhaust steam from cooling the live steam as it escapes. Mr. Clark claims that a great saving will be effected by the use of his engine, and also that it will be less costly to construct, it not being necessary to bore out the cylinder.

NEW GOLD DISCOVERIES IN ALASKA.—The *Alaska Times*, published at Sitka, and several letter writers to the San Fraucisco journals, report rich discoveries in the Tarkou country, the southern part of the Territory of Alaska, near 54° 40′ N. L. The ground, located in the body of creeks, near salt water, is favorable for sluicing and yields five cents to the pan, according to statements of James Strickan and Fred. Douglas, the prospectors. They were directed to the spot by some Indians, and found the gold in scales, and in small lumps. The Kake Indians, who occupy the country, are hostile, and forbid the "Bostons" from "building houses there."

Baker & Hamilton's California Gem Seed Sower.

The machine herewith illustrated is built by the Sweepstake Plow Company, of San Leandro, (which company also manufacture the celebrated Sweepstake Gang Plow,) which, as may be seen from the engraving, can he readily bolted to the bed of any wheeled vehicle. The sower is set in the back part of the wagon with the sower part facing behind. The motion is obtained from the wheel of the wagon, and is communicated (by spur gearing on an endless chain) to a horizontal shaft, on the end of which is a bevel wheel which mashes into a bevel pinion on a perpendicular shaft, on the top of which is placed the ingenious device called a disk, which scatters the seeds. The disk is circular in form, and inclines downward in every direction from the center to the circumfereuce. It is provided, at suitable and regular intervals with flanges, which radiate (from a point forward of the center) in a direct liue beyond the circumference, and are curved and formed in such a manner, beyond the circumference, as to make a slight cup or pocket, which throw the seeds out like the hands. The disk is open on the two sides and in front, the back part bcing closed to prevent seed scattering in any place except in front. The seed reaches the disk through two feeding holes, mechanically arranged, so that when one is opened the seed is thrown to the right, and *vice versa*—both being open, the seed is thrown both right and left. The slides covering the holes are moved by two levers conveniently arranged for the operation. The sowers heretofore nsed in this State scatter the seed by centrifugal force in a perpendicular circle, thus covering the ground behind the propelling power twice, and also throw the seed so high that it is easily driven before the wind ont of its intended course, while the seed from this machine is thrown horizontally, and delivering at will in any direction. This is the invention of Mr. Floyd, of Illinois, and sold by Baker & Hamilton, who are sole agents for this coast. It may be seen in the agricultural department in the Pavilion.

This firm also exhibit Earle's Patent Steam Pump. This pnmp is made of different sizes—the one on exhibition being a No. 7, and capable of lifting 18,000 gallons of water per hour. The special advantages claimed for these pumps, are:

First.—It is composed of fewer pieces; every part is easy of access; all joints are "ground," and both pistons have "spring rings."

Second.—The steam valve is a single cylinder of cast iron, perfectly balanced, which in its motions is without comparative friction. It is operated by steam taken from the main cylinder, after it has completed its work and is ready to be exhausted, thus economizing steam to a great extent.

Third.—It is without "dead points," starting whenever steam is admitted to the cylinder, consequently dispensing with all starting levers, cranks, balance wheels, cams, springs, weights, gears, and other appliances ordnarily used.

Fourth.—The peculiar construction of the water cylinders render it easy to change the valves, thereby fitting them for either hot or cold, thick or thin liquids, oils and acids.

Fyfth.—It runs without noise or jar, and as the steam valve has only a horizontal motion, and being balanced, at a great speed also. It works as perfectly at one stroke per minute as at two hundred strokes.

Sixth.—Its price.

BAKER & HAMILTON'S CALIFORNIA GEM SEED SOWER.

Life-Boat Building on the Pacific Coast

Mr. L. H. Herrick's Metallic Life-Boat, in the southeast corner of the Pavilion, demands more favorrble consideration at our hands, and more space than we have given it, in view of the inaugnration of so important a specialty in construction, on this coast. Metallic life-boats do not cost much more than wooden ones, yet are twice or three times more durable. A common wooden boat of the same size as that in the Fair would cost $250; the latter costs bnt $300, and will last thirty years, if well painted. A metallic boat is, in fact, almost indestructable—the first iron vessels ever built being yet afloat. The importance o having more life-boats on the Pacific coast conld not be so eloqnently urged by anything we can say as by the fact that had the crew of the Harvest Queen, or other vessels lost during the year where not a soul has been heard from, been provided with one, they could have come ashore as certainly as if the journey had been on dry land. Every vessel should have one. Heretofore our Pacific-built ships have not been able to get them without paying too large freightage around Cape Horn. An ordinary wooden boat, it should be known, when once filled with water, can be sunk out of sight by one or two men, and will last but five or ten years. Mr. Herrick will make a specialty of building life boats. They are made of galvanized sheet iron, rivetted with tinned nails.

THE PACIFIC PIONEER PAPER COLLAR Co., have samples of their goods on exhibition which compare well with similar articles imported from abroard. The manufactory is at 769 Market street, between Third and Fourth. As it is the only establishment of the kind on the coast, and furnishes the trade with an article at least equal to the imported and on more reasonable terms, it certainly deserves patronage.

Mechanical Progress.

Machine Short-Hand.—It is said that a stenographic press has been invented in England by the nse of which the art of reporting *verbatim* can be acquired in mnch less time than by the old methods. The reporter aits at aomething like the keyboard of a pianoforte, and by applying his fingers to the keya, prints the words as they drop from the lips of the speaker, syllable by ayllable, on a strip of paper which rolls along underneath. This is done by means of vowel and oonsonant signs, which, like phonetic writing, may be "set np" in English by a compositor who understands them. The *Scientific American* says that a man in its employ got up something similar to this aome years ago.

The Kennedy Clock.—The electric clock shown at the late Industrial exhibition of the American Institute by the Kennedy Company, is thns described in the *Artisan*: "The cnrrents from a weak galvanic battery, transmitted through two coils of wire, act upon steel-bar msgnets set within the pendulnm ball. One of the wires is charged positively and the other negatively, and they are placed near the bottom of the case, so thst the ball of the pendulum awings in an open space in the center of either coil; when the pendulum ball reaches the positive coil, it becomes positively charged; it is repelled; and, swinging over to the negative coil, becomes negatively charged, and is again repelled. It is thus driven from side to side as long as the current of electricity is kept up by the battery. The alternate charges are made and broken by a simple slide-bar moved by a wire pin on the pendulum-rod. The only attention this clock requires is a spoonful of acid once in a few months. The mechanism that moves the hands consists simply of two cog-wheels and a ratchet-wheel."

Manufacture of Plated Spoons.—German silver (composed of nickel, copper and spelter) is rolled in strips and cut by machinery into blanka of the dimensions of a spoon or fork, which are rolled on graded rolls, which make one part of the apoon or fork thin and another thick. Next the blanks are dipped in acid and cleaned, when they are ready for plating. This latter operation is done by means of baths filled with liquid acid, in which plates of pure silver are auspended; the action of a battery prodnces a deposit of ailver on the blanks, which are hung in bunches in the baths. The process of deposition is gradual, and each bunch of blanks is frequently weighed to ascertain whether or not it has received the requisite amount of the precious metal. The time occnpied in single-plating tea-spoona is one hour and twenty minutea.

Scratch-brushing, bnrnishing, buffing, and washing complete the process.

A Peculiar Property of Mild Steel. At a late meeting of the Iron and Steel Inatitute in Middleborough (Eng.), a paper was read by a member of an iron-making firm, in which reference was made to a peculiar property of mild steel, obaerved in the course of late experiments upon the Siemens-Martin process. It was thus stated: "When ordinary steel was chilled in cold water at a red heat, it hardened more or less according to the percentage of carbon which it contained. When, however, the carbon was reduced below a certain amount, about 0.5 per cent.—it then obeyed the same law aa copper. The metal when chilled became aoft to the file, but at the aame time more compact, tougher and atronger."

Ramapo Car Wheels.—The Ramapo Wheel and Foundry Company in Rockland, N. Y., turns out 36,000 car wheels per annum. They use the iron from the hematite ores of Massachusetts and Connecticut, and the wheels stood the recent test of the 1200-pound drop beyond all others.

Machine Carpet-Sewing.—In some large New York carpet-sewing establishments, the operator now sits with hia machine on a car and travels aloug the aeam, sewing as he goes.

Safety Blasting Material—"Ammonia Powder."—A blasting material, which it is claimed will prove to be attended with less dsnger than gunpowder, gun-cotton, nitro-glycerine, or dynamite, has been mannfactured at the Nora-Gyttorp Powder Mills, in Sweden. It is the invention of Mr. Norrbin, and appears to differ from gun-cotton in having the cotton replaced by another material. Its explosive force is compared to that of nitro-glycerine. Blast-holes, loaded witn this powder, are exploded by means of a cartridge containing common powder. It does not require heating in cold weather. To test the safety of the new powder, experiments were made by fastening a lamp to a pendulum, which was caused to oscillate; gunpowder, gnn-cotton, nitro-glycerine, and dynamite, all took fire as the flame passed over them, bnt the ammonia powder did uot begin to burn till it had been touched hy the flame 20 times.—*London Mining Journal.*

Locomotive Light.—The *U. S. Railroad Register* thus describes a new light for use on rail cars or engines: "It is a sort of double water-cooler, with the gas-pipe issning from near the hottom. The top is arranged like a gasometer and rises and falls with the quantity of enclosed hydrogen. It is in fact exactly a "student's lamp" hydrogen gas generator, iron filings being used instead of zinc, and the hydrogen heing permitted to flow down to a lower chamber, packed with curled hsir, kept soaked with coal oil, which it takes np and incorporates. and so issues as carburettcd-hydrogen or common gas. The apparatus is self-regulating, cannot explode; needs no winding np; and must be cheap. The flame is tenacious under draft. The petrolcum needs renewal every six months."

New Method of Fixing Mineral Teeth to the Plate.—Duchesne, of Paris, has invented this plan: "Eaoh tooth is furnished with a hollow of a size exceeding that of the orifice, by which orifice the rubber in its plsstio state enters into the tooth, assuming inside the internal configuration of ths cavity; the rubber being then vulcanized, the tooth becomes firmly attached to the plate or foundation. The cavity is made by placing a plug of wood of the desired shape in the mold, when the tooth is shaped; this plug is destroyed by the heat in the subsequent baking."

Steam Velocipede.—The *Altoona Tribune* describes a steam velocipede, the invention of T. W. Worsdell, Msster Mechanio in the Pennsylvania Railroad shops. It consists of a small npright hoiler, 2¾ feet in length and 10 or 12 inches in diameter, of the best steel, neatly jacketed with walnut and brass bands, and having a smoke stack 12 inches high. The running gears consist of two wheels in front, on the axle of which the boiler rests, and one wheel in the rear (on a movable pinion), which assists in bearing np the rider and also acts as a rudder.

Boiler Tubes Coated with Lead.—A recent English invention reported in the *Colliery Guardian*, consists in covering the exteriors of the tubes with lead, either in the state of sheet metal or by dipping them into lead in a molten state, for the purpose of preventing incrustation and corrosion. The tubes may be covered with the lead in the following manner: The tubes are first tinned in the ordinary way, after which they are placed in molds, and a coating of lead cast around them; they are then passed throuah dies or rolls to reduce the lead to the thickness required.

Petroleum for Currying.—The *Mechanics' Magazine* says Vanner & Prest, of London, have patented the use of the residuum oil obtained in distilling petroleum, in the dressing of leather. When the oil is of a apecific gravity of about .880, which is about that of the oil aa now usually manufactured, it is nsed with tallow in the proportion of 14 pounds of oil to 16 pounds of tallow.

Gas Pipes without Cement.—Cast iron tubes for water or gas are now made in England by turning off one end conically, and boring out the end of the tube to which it is to he fitted at the same angle, so that the end of one may he inserted into the other without the addition of the ordinary cement. The junction is effected very qnickly, and the joint is perfectly tight.

The Centrifugal Machine for Wine-making.—M. LeDuc has substituted the centrifugal used in sugar-making, for the grape-press in wine-making. Tho result ia said to be aatisfactory.

Scientific Progress.

Dr. Van der Weyde's Reply—Force Not Independent.

We gave last week an abstract of an abstrsct of Prof. Walling's paper on the "Independent Existence of Force" from the *Gas Light Journal*. In the aame journal, Dr. Van der Weyde this week replies to the viewa therein expressed. We quote briefly:

"In regard to the assertion that force has disappeared in the pendulum when at its highest point, I answer that in the pendulum, just as in the lifting of a weight, work has been done, and that the force apparently consumed is ouly stored up, as heat is stored up in the process of separatiug the carbon from carbonio acid, by the power of the sunheam on vegetation, or ss we may atore up heat at any time as latent heat in steam. * * I maintain that there is no necessity for accepting the independent existence of force; the theory that all force is nothing hut matter in motion, offers a sufficient foundation for a sound philosophical explanation of most phenomena. As heat is only a mode of motion of matter, and as heat is convertible into force, force is another mode of motion of matter. I protest against the metaphysical sense given by Professor Walling to the expression "potential energy," and msintain that its rational mesning is simply the stored np, or latent motion of matter, either molecular or as a mass. I maintain that the primary cause of all force or motion of matter is gravitation, which once caused nebular matter to coalesce in diverse centers of gravity, and so originated planetary systems, the enormous motion of great masses of matter being changed at the center of attraction (the sun) into molecular motion (caloric). This molecular motion is now radiating hack into space, by means of vihrations of enormous velocities (light and heat); and on the surface of our planet, we may easily trace all motion back to the power of this (as it were) reflected gravitation (the sunheam). Surely without this agency there would exist on our earth no motion nor life, which latter is nothing hut motion derived from very complex chemical and thermic energies.

We are thus driven to the conclusion that all the diverse forces which surround us, and to which we owe our existence, are nothing but gravitation in disguise. And as in gravitation we find the origin of all force, and gravitation without matter is inconceivable, so force without matter is inconceivable."

A friend at our elbow says: We partly agree with both of these gentlemen. Undoubtedly gravitation (or attraction, which is the same thing,) is the cause of all motion in matter; as Dr. V. has here neatly and comprehensively summarized. In other words, gravitation is the "potential energy" of the atoms of matter, which caused them in the first place to coalesce. But whence came this potential energy of the atoms? Is it a conclusive answer to this question, to say that such energy is an attribute of matter? Is it not rather, according to the analogy, something "stored up"? If so, it had a source. And that sonrce must have been an independent one. Force then may he said to have an existence independent of matter. Indeed, the very *existence* of material atoma is *perhaps* dependent on constant action at that independent source of energy, whatever and wherever that may be.

But we do not offer this as *science*. Only *demonstration* makes acience; and thia is, and we believe will remain, undemonstrable. The best then that we can do, perhaps, is, for purely *scientific* purposes, to consider force,—or potential energy, or gravitation, or attraction, or whatever it may be called,—an attribute of matter; simply because we cannot go beyond that without going outside of the domain of science. In fact, we may remark, that as soon as we attempt to go back of, say, the *nebular* condition of matter, the condition of the matter hecomes,—so to speak,—slightly *nebulous*.

Plasticity of Pebbles and Rocks.—Prof. W. P. Blake read a paper upon this subject before the American Association at Salem, and exhibited in illustration an Arizona conglomerate, consisting of a paste of micaceous schist, filled with pebbles, and elongated and compressed. Prof. Blake brought forward arguments iu support of the theory that deep seated rocks often become plastic. He considered that the molecular movement of the hard rocks, so largely found distorted in the Sierra Nevada, might have been produced by enormous and long-continued pressure, prohably at a moderately elevated temperature. M. Tresca has shown that nnder such pressure aolida can be made to flow in the same manner as liquids. By stndy of the phenomena, new views were opened of the strncture of great rock masses, and varions phenomena associated therewith.

Ericsson's Late Researches.

At the late annual meeting of the National Academy of Science in Northampton, two interesting papers by Capt. John Ericsson were read; one on the "Retardation of the Earth'a Rotation by Solar Influence," the other on "Solar Heat and the Temperature of the Surface of the Moon." In the course of some letters addressed to Prof. Henry, introducing these papers, Capt. E. states that he has fully demonstrated the practicability of his scheme for making solar heat available as a motor; some of hia solar engines having attained a very high rate of speed. He also says that in order to facilitate his investigations, he has constructed a solar calorimeter and solar thremometer, by means of which such precisiou has been attained, that tho temperature of the sun's rays and the dynamic energy of its radiant heat, as determined from time to time by those instruments, indicate with considerable accuracy, the eccentricity of the earth's orbit. The presence of vapor in the atmosphere is also, by means of tho calorimeter, ascertained with much exactness. The solar energy being proportionately reduced hy a greater or less amount of such vapor, a register of it is at the same time a correct register of the amount of vapor present, if a proper allowance be made for the difference of zenith distance. A variation of a one-hundredth part of such amount of aqueous particles present in the atmosphere is readily detected by this instrument.

In a postscript to one of his letters, Capt. Ericsson makes the following remarks in reference to the

Temperature of the Moon.

"My investigations by meaus of the solar calorimeter and solar thermometer, prove conclusively that the temperature of the moon's surface under the fnll effect of the vertical sun, owing to the absence of an atmosphere, is not sufficient to render mercury fluid—much less will snow melt under such a temperature.

The irresistible inference I draw from thia fact is, that our satellite, in place of being a "dried-up sun-scorched body," is covered with ice and snow, the peculiar reflection observed resulting from enormous masses of ice upheaved and broken, during the cooliug and consequent contraction of the body, while the peculiar formation of the general surface, the innumerable circular cavitiea so unlike anything which the internal heat of the earth has produced, is the resnlt of hot water forced ont by contraction, scoopiug out the ice, and forming those vast snrrounding banks of snow and congealed water which excite our wonder; ultimately, during the last effort of the internal heat, raising those conical projections of ice which, in so many cases, stand isolated in the middle of the flat bottoms, the frozen ocean and lakes."

The Rocky Mountain Trend.—Mr. W. H. Dall read a paper at Salem, on this subject. He stated that the Rocky Mountain Range, between latitudes 60° and 64°, bends trending with the Eastern coast, so that instead of there being, as represented on the old maps, a straight line of monntains up to the Arctic Sea, there is an elevated plateau, only broken occasionally by a few ranges of hills. This hend of the mountains prevented the characteristio birds of the west coast from coming north, while a few species of Eastern birds came clear to Behring's Sea, north of it, over the plateau. He also stated that the elevation of the bottom of Behring's Straits 180 feet would make dry land between Asia and America, but that a deep ocean valley extended southwest from Plover Bay, just west of the Straits, along the Kamtschatka coast.

REVIEW OF THE FAIR.

Classification of Articles.

CLASS IX.

GLASS, POTTERY AND EARTHENWARE.

Glass Blowino is a successful industry on this coast; aad, notwithstandiug the many hundred gross of articles that are turned out mouthly by the Pacific Glass Co'a works, at the Potrero, the field ia not half occupied, for bottles aad common kinds of glass ware aro imported in qnantities sufficient to keep husy two more factories like that at the Potrero; and, of course, no ordera aro filled under the circumstances, from China, which couatry is supplied from Englaad, where labor is uo cheaper than Chiaese labor here, though the hurthen of taxation is less.

The Raw Materials

Are not yet fouad near eaough home to suit. Sand is at present obtaiacd from the beach at Oakland, but not the best. That from Monterey is excellent qnartz sand, hut is moro costly, hy reason of higher traasportatiou than tho Morria river saad of New Jersey, shipped around Cape Horn. Soda ash is obtained cheaply as a chemical side product from the Eaglish chemical works. Graphite of the best quality is obtained from Mexico. Salt aad lime are native. The ordinary proportioas are 100 parts aand to 45 soda ash, 15 lime and 3 salt.

Black glass hottles, aad demijohns of one quart to five gallona capacity, are the articlea for which the exhibition for the Fair is apecially meritorious. In respect to the quality of theae, our glass works excel, and in price they compete auccessfully with, the same articlea imported. The green tinged glass, composing the hulk, is colored the natural color of potash, the darkly graphite dissolved in tho viscid mass —which is quartz in the main, made soft, or fluxed, by the alkilies added, resulting in a silicate of aoda, etc. It is by the same general principle of adding alkalies, according to certain eqnvialents of silicic acid, that we flnx onr ores in smelting; or, in the wet way, that we succeed, as nature herself does in her aubterranean chemistry, in dissolviag everthiag in water, for redisposition elsewhere.

Fire-clay to make the great crucihles (of which four or five dozen are used up in the Pacific Glass Works anually), has not been found on this coast of the proper infusihility aud tenacity, so that Stourbridge and German clays have to be imported at $60 per ton. Many clays have been sent to iadividuals and to various works in San Franciaco, from all parts of the country, but their composition and qualities for particular uses are seldom tested, aad are not brought into wide enough notice amongst persons who might be interested.

The Display

Of the Pacific Glass Works at the Fair, coasists of the useful kinda of hottlea, demijohna, carhoys for acida, glasa tubea aad a large number of fancy productiona hy akillful workmen. After lookiag at this, the atudent of our progressing industries should visit the works at the Potrero, where he will he politely met and much eatertained. The proprietor, Mr. Beanett, is in the East, having gone with the Pioneers.

Pottery.

Our capabilities in this hrauch of maaufacture are great, but scarcely represented ia the Exhibition. Everything that can he is imported from the East and from Europe, where there are large factories turning out marketable goods by wholesale, at prices with which operatora here do not seem able to compete. The Albion Pottery at Antioch, Wm. Ries, of Salt Lake, Utah, and Clark'a establishmeat at Sacramento, are the only ones represented; the latter hy a very iateresting display of the raw materials, with a good assortmont of the more useful products. Though porcelain clay exists, of varied quality, in every part of the State, it has not hitherto heen worked up into any of the finer qualities of tahle crockery. The first attempt of tho kind is Mr. Ries' contribution from Salt Lake. He exhibits several small piecea of very tolerable porcelain, glazed and unglazed, which are auggestive as to what we may look for in the future from that directioa. Antioch contributes the hest stoneware products, in a few large vases, pots and water vessels, of agreeable color.

Glass Cutting and Ornamentation.

John Mallon and Thomas O'Neil hoth make splendid exhibitions of the kind of work belonging to their trade—cut, grouad, paiated, aad bent glass ornamentation, a kind of work in which there seems to be a great deal to do. Beat glass, exhibited hy tho former, is curious. Signs, aud othor ornameated hacking, gilt, ailvered, or mirrored, appear popular. James Lick exhihits some finely ornameated frames of the latter description.

Miscellaneous, and Imported Ware.

Glass aeckties, etc., made in Veaice, are exhihited by J. F. Fugazzi, in his toilet case. There are looking-glasses framed in spnu glaas of the same descriptioa, exhibited in the art gallery, also of Venetian manufacture, by D. Ghirardelli, which look uucomfortably fragile, aad aro lahelled at prices eutirely ahove tho value of such tasteless articles.

The best thing in the Fair, if we were only ahle to take the credit for it to ourselves, is the porcelaia, glassware aud statuary exhibition of R. A. Swaia, coataiaing a varicty of Freach porcelaiu ware which is auperb in design aad manufacture. Some similar articlca are also shown iu the silver plate cahinct of Haynes & Lawton.

Hallidie's exhihitiou of Morgan plumhago crucibles comes under this class, aud is noteworthy for its completeness of assortment. The excellence of these crucihles is such, that notwithstaading the high import duties, they are used to do most of our amelting in the small way.

Mirrors.

Gump, Whittier & Fuller, Jones & Wooll, and others, have placed numerous, and very splendid, mirrors on the walls of the art gallery,—but people never see the mirrors, nor the frames. If they are in the house-furnishiag way, they may be induced to glaace at the latter—which are very different in style, those of Jones & Wool heiag gilt aad highly ornate; while Gump's are of plain rich woods, with little gilding, aud to our taste very beautiful.

CLASS X.

SECTION 1.—MINERALS AND GEOLOGICAL FORMATIONS.

For mineralogists there is a good deal of interest in the Fair. Of ores, the Biggs & Gardner cabinet of

White Pine Specimens

Is one of the most interesting exhibitions of the kind ever made on this coast, as illustrating the metallurgical conditions of aay one locality. The novel feature of White Pine and its ores, is the extraordinary mixture, often innate to appearance, of pulverulent chloride of silver with carbonate of lime, or limestoae rock. For distinction's sake, the miners term this pulverulent impure suhstance chloride, whilo the pure chloride, resembling horn, is called horn-silver. To a mineralogist the mixed chloride ores are at first an unsatisfactory study; the yellow powder, colored by oxides of iron and antimoay, and carbonate of lead, may be rich in chloride or may he harren and base, or of limestone chiefly. The ore sorter'a practical information leads us into an acquaintaace with the peculiar mixtures which are rich—the mineralogical ingredients of which are an index to the chemical geology of the remarkable limestone-chloride region of Eastern Nevada. As in most metalliferous regions there are probahly at bottom two or three sets of veins, which run parallel in as many differeat directions, furnishing different minerals as ores, and of differeut age, as evidenced by the veins of one course uniformly cuttiag those of another. Copper and iron in association with both the "ameltiag" and "milling" orea are plentiful, aa azurite and hematite, hut lead, both as carhonate and aulphuret, beloaga to a region distinct from that of tho chlorides. Solfataric action has had much to do with the metals in this region, siace we have here great hlocks of hematite which, from their ahape, are to be recognized as precipitations from circulatiag waters. But the intimate degree of the association of chloride of silver with limestoae peculiar to one geological formation, remains an interesting problem for further careful observation. Mesars. Biggs & Gardaer have had uausual facilities for the oollection of the best specimeas that havo heen hrought to light, from tho earliest openiug of the miaes to the present,

Miscellaneous Minerals,

Consisting chiefly of ores and rarities, many of which are valuahle mineralogically, are exhibited in large and splendid collections by George Pfeiffer, and George P. Rose in the music room. In one of these we observe crystallized nativo silver, which is a rarity. Minerals to he of any valuo, should be named mineralogically, and classified. Ore collections are of no interest or use whatever except as showiug the occurrences of the several metals according to particular localities; and beiag often of scarcely recognizable mixtarea, ore labels should always note the minerals, as well as the gaugue. An oro collection not so arraaged and labelled, is good for oaly one thiug: to be disposed of for a aoag to aome one who will kaow what to do with it, in order to make it of use to the observer aad atudent.

Special Occurrences of the Metals

Aro illustrated hy G. S. Brown's specimens of gold bcariag cemeut aad gravel from the Pleistocene river chaunel, at You Bet, Nevada Co., (a comparisou of which with somo Australian deep placer gravel would be most iaterestiug); a large specimen of refractory partzite, a new variety of fahl-ore or grey copper, from Blind Spriugs, Mono Co.; clusters of aplendid crystals of ruby silver (proustite, or arsenical ruby, as we judge by looking through the glass) unnsually large, from the Cordillera mine, Mexico; some specimens of oxide of mangaaese from the Tide Water Manganese mine near San José, bclongiag to the systems of manganese veins peculiar to the cretaceons formation of Central California.

Lava from Earth's Interior.

From Kilauea, the great crater of Hawaii, the largest active volcano in the world, is exhibited by C. J. Clark in a neat case contaiaing ahout three dozen varieties, and a hundred apecimeas. What we call lava on the eastern slope of the Sierra Nevada is usnally vesicular basaltic lava. That from Kilauea is basaltic, and dark colored, bnt not alwaya vesicular. The lava of the western alope of the Sierra is trachytic—i. e., coutaius more ailica, and is of lighter colors. A descent into the great crater of Kilanea ia like watching the phenomena of creation, studying geology in the earth's foundation fires. Mr. Clark shows everything that a Yankee could lay hands upon under the circumstances,—and more, for he displays triumphantly an impression of the almighty dollar in the molteu rocks.

The magnificent specimen of Partzite on the Fair Press oounter helongs to Prof. A. F. W. Partz, of Oakland.

Systematio Collections.

A systematic collection of Minerals, Ores, Conceatration aamplea, Metallurgical products, Rocks, Soila, Fosails, Speoial and local geology, and Raw Products, embracing ahout 2,000 specimens, collected with regard to apeciea, and for private reference and study only, may be aeen in the Mining and Soientifio Press apace, the property of Mr. Bowman. The minerals embrace all the common, and many rare species, arranged according to Dana; all the ores of silver, lead, copper and iron especially. Tho orea are arranged according to metals and localities. The concentration samples represent the methods pursued at Joachmisthal, Bohemia; Freiherg, Saxony; Clausthal, in the Harz Mountains; Redruth, Cornwall; and Nevada County, Californaia. The metallurgical products represent smelting of tin at Altenburg, Sax. and Redruth, Cornwall; of lead, copper, etc., at Freiherg, Mansfeld; Central City, Colorado; Stockton, Utah, etc.; and various amalgamation products. The lithological specimens consist of a complete suite of all the leading apecies mentioned in the booka on that aubject—about 100—arraaged according to Cotta. The fossils embrace the frequent specimens from each of the geological ages, collected chiefly in Russia and Germany. The special geological collection embraces auites of the Eastern Boundary Survey (from Oregon to White Mountaias, Mono County); of the Rocky Mountains via Bridger's Pass; of the Pleistocene rivers of California; of Mt. Diablo, Tamalpais, San Francisco peainsula, etc. The aoils aud raw products are Californian.

Dr. L. G. Yates, of Alameda, exhibits in the same compartment, a suite of the Silurian, Devonian and Carboniferous fosails of New York and Ponnsylvania,—a very good collection of 50 specimeas.

A small cahinet of minerals and curiosities from the M. & S. Press office is to be seen at the opposite coraer of Dewey & Co's space.

T. H. Selby exhibits a suite of lead ores under various stages of coneentration, and smeltiag products.

SECTION II.—CHEMICAL SUBSTANCES, DYEING, ETC.

Little dribblets from tho chemical works and drug store lahoratories of San Franoiseo, chiefly the latter, constitute all that there is in the Fair uader this section. The exhibition is still more unsatisfactory than that of last year. Scarcely aay other department of the resonrces of a new State could make so iateresting a showiag. There are Wakelee'a, Rogers', Judaon's, and Falkenau & Haaks' ohemical works, large establishments, quite narepresented. Crane & Brigham have a largo case of very pure crystals of aulphate of copper, which is maaufactured for seed curiag, and for pan amalgamation—the only chemical raw product exhibited. In aome of the natural products of Californaia, there are, nndouhtedly, the germs of future profitahle manufacturing, in virtue, chiefly, of conveuieace for economical prodnction; and many a good thiag ia therefore rather kept aecret hy those who know its value and the means of making it valuable. Our availahle deposita of aulphur, borax, carhonate of magaesia, sulphates, chlorides aad carbonates of soda and potash and lime, nitrates and what not, are to a great extent undeveloped, either because the market or tho maaufacturer is not ready. What *is* beiug done, is proclaimed oaly through the regular channels of business, to those who acek the supply, and none besides. Gradually Eastera importation is undermined hy chcaper native production, yet so quietly that the coasumer has scarcely become aware of the change. The acids, painta and wholesale commercial chemicals made at home, are not he fore ua for dissertation. We can ascertain who makes the chloride of lime that we huy, but not through the exhihitions at the Fair. Very oreditable progress has been made in the manufactare of acids aad all the finer chemicals for which there is a demand.

Pacific Oil and Lead Works.

One prosperous establishment that is fledged and developed long aince into a commercial institution of the city, is creditahly represented, yet only in part,—the Pacifio Oil and Lead Worka—projected and brought into succesaful operation hy Mr. Brunaer, the Superintendent. Here lead is oxidized and tranaformed into carhonate or white lead, to make paint. The intermediate product is not exhibited, but the oils required, aad the linseed aad castor bean from which they are manufactured, are displayed in various stages of purification; and an excellent article of metallio paiut for ahips, manufactured from these products, is exhibited in small cans.

Dyes.

Imported liquid laundry hlue and "Parepa Rosa's toilet compaaion," exhibited by S. Pillsbury; a case of aniline dyes, hy H. Manz; Fugazzi'a hair dyes; aad a California-manufactured composition for staining wire cloth and wood, hy Samuel Purdy; and also some patent stamping powder for embroidery, hlack aad white, by Mrs. R. L. Joaes, of Sacramento, constitute the budget of articlea under this mysterious head. Some of these dyes are of vegetable, and others of miaeral origin, the tests for which are very simple as given tahularly in Bolley'a Technical Analyais. To test a youag lady's lock of hair, hurn it on platiaum foil, then moisten with various solutions to detect any of the vegetahle or mineral dyes in the catalogue of commerce, from madder red to chrome green.

Curious Compounds

For nseful purposes, are Steele & Co's "Sun Pearl" for the complexion; Dr. Barker's chemical compound for strengthening cordage,—a white powder, composition not stated, which is dissolved ia water and supposed to he a better atimulant to lax fihre than brandy and water; Charles Zwick'a Caucasian fly glue, a suhstance operatiag on the mock-auction principle, of giving to the world that which is most wanted, but with a slight drawback.

Mineral Waters.

We are not able to keep the run of these, nor even to follow them up, hut certain it is that we are blessed with riches here. Napa, New Almaden aad the Summit Soda Springs, etc., are becoming widely knowu already for their extraordinary qualities, the chief of which is an exuherance of carhouic acid, heiag associated with various miaeral ingredients of stomachic and constitutional influcnce. Pacific, Congress and Seltzer water, exhibited by L. R. Mills, Napa soda, by Dr. J. H. Wood, and New Almaden Vichy Water, hy Pioche & Co., besides some aromatic waters, by Edward Louis, are what we have to taste and see in this specialty. These waters are bottled and delivered or shipped at moderate prices; a work amounting appareatly to a very considerable, and not unprofitable industry.

Oils and Soaps.

Amongst our new and flourishing industries the preparation of oils for various

purposes, and the manufacture of candles, soaps, lubricating compounds, etc., occupies an important place; though we are merely following in the trade and practices of similar establishments elsewhere.

Beginning with Madame Balcear's vegetable washing fluid, the principal ingredient of which is curiously derived from a plant growing plentifully on the hills in California. The list of soaps embraces Kane's condensed soaps and fluids, from the Parrish soap works; Chiloott soap, made "from an entirely new base," by James Scrimgeonr; samples of the Challenge Co's soap; J. H. Warwick's "sapolis;" Dr. Clapp's chemical soap; and last, but most satisfactory and interesting exhibition of all, the Standard Co's assorted soaps and samples of raw meterials, cocoanut oil, caustic soda, oleic acid end tallow—and incidental products—carbonate of soda, sulphete of soda, gypsum and residunm.

A business branching off in another direction, is the glue and neats foot oil establishmeut of Dana & Coddington, which is represented by a fine exhibition of glue of various kinds in herrels and sheets, aud some very snperior curled bair. There is much money in all these side products from the butcher shops, and they are in never ceasing demand.

Polish.

Spanish lustral for the hair, exhibited by Lempe; Lake'e blacking; Waite's California megic polish; Hatch's Spenisb dressing for leather, are varieties of oils and colored substances that make polish—oils that will dry with a emootb reflecting surface.

Lubrication.

Axle greese is preferred, from the manufecturers, in California. Hucks & Lambert have long been making a superior article, the head of the establishment, Mr. John J. Hucks, being one of the best authorities, practical as well es theoretical, on hydrocarbons, in the country. Great skill is requisite in the distillation of oils, in order to obtain the kinds best adapted to this purpose. Stringer and others also exhibit superior axle grease.

Hair Restoratives, and Miscellaneous.

Hair restoratives are represented in the Fair by M. Howard, the colored specialist, in person,—a very gentlemanly and enterprising man, who examines the decayed roots of fallen hair like a doctor, and in many ceses finds it possible to re-invigorate them end to stimulate growtb to sucb a degree as to meke the results eppear more astonisbing than they really are. Mr. Howard exbibits photogrephs of persone enccessfnlly operated upon. Boxes and bottles of California ink, by J. J. Knowlton; Russian inflammeble balls, by Michael Lebeterd; yeast powders, saleretne, etc., by Boyd & Co.; homeopatbic chemicals, by Sontag & Co.; oxygenated paints, by J. E. Colemen; cough drops, by M. H. Garland; and Buckeyo Selve, by Eakin, complete the miscellaneous cbepter. It may be remarked in conclusion that the pharmaceutists of San Francieco, regular and irregular, are as active as they are in the East in compounding peculiar mixtures for special ailments, or for general curing, of the stimulating clase.

CLASS XI.

Jewelry, Silver and Plated Ware.

The only jewelry on exhibition is a fine display of Hair Jewelry by Mrs. C. Cook, of 519 Montgomery street, wbo exhibits several cases of sucb work, together witb other bair work of verions styles and patterne. Aleo an apparatns for bair work in practical operation. Mrs. Cook has long held a prominent position in this specialty of fine manufactures. It is a branch of ornamental work worthy of encouragement when conducted with such becoming skill.

The Paoific Plate Works, Haynes & Lawton, make a fine exbibit of gold and silver electro-plated ware, comprising every variety of table furniture in that line, most of which cannot be distinguished from the solid article. The application of this process for covering copper, German silver, Brittania metal, etc., with eilver and gold, is now very extensive. Ae is well known, this method of plating is accomplisbed by depositing eilver or gold upon the article to be plated, from a solution of those metals, by the aid of galvanic action. The great art and secret of this process consists in the proper preparation of the plating solution. A very slight knowledge of chemistry will enable a persou to deposit a film of silver or gold upon a surface of copper, etc.; but much practice and skill is required to perform this work in a really rtistic manner. Various hindrances and impurities ere lieble to he found in the solution, which, if left there, would fell upon tbe snrface of the article, and render it rongh and unsigbtly, especislly to tbe practiced eye. None bnt a skillful workman csn meet ell these contingencies. Tbe exbibition of the Pacific and S. F. Plate Works afford complete evidence tbat both of these establishments fully understand their business.

The San Francisco Plate Works exhibit one cese of new plated work and another of old ware, replated. Tho difference between the two is quite apparent, and shows the impossibility of giving to old ware the sharpness of outline and finish thet is found in that wbich is new.

George M. Wood & Co. exhibit a large veriety of door plates, "fire plated." Mr. Wood also exhibits a fine assortment of stencils, seals, business stamps, etc.

Tbe process of "fire-plating" is quite a different thing from the electro plating, just described, and is done by rolling together tbe two sheets of metal under heavy pressure, the surfaces to be joined having first been wet with a solution of borax, and then subjected to a semi-welding beat. Tbe union between the surfaces so treated is much stronger than that effected by the first described process. This mode of plating wes first introduced in 1742 by Tbomes Bolsoner, of Sheffield, Eng., end soon became one of the etaple trades of tbat celebrated manufacturing town. The principle of electro-pleting, though known to scientists as early as 1801, was never brougbt into practical nse in tbe arts until 1837, wben Mr. Thomas Spencer, of Liverpool, mede his experiments aud communicated their reeults to the Polytecbnic Institution of that city. Of late years, tbis process has almost entirely superceded that of "fire-plating."

Geo. T. Cascbolt, two cases of elegant silver plated ware for coaches, lamps, etc.

John J. Joiner & Co., mannfactures of metallie eigns, make a fine exhibit of such signs and specimens of engraving on metal. Odermatt & Ettlin exhibit patent fountain pens and drawing instruments.

In dentistry, we have two exhibits of operative work—T. C. Jessup and Q. L. Adams, each of whom exhibit a case of samples of their work in that line. D. S. Hutchinson exbibits a case of specimens of mechenical dentistry, embracing among otber things his petent flexible plates.

G. W. Patch exhibits samplee of etencil work; and F. M. Truworthy exhibits stencil plates and impressions. Mr. Hilton, of Chicago, also sends eamples of work in this line—consisting of one large ornamental piece, also stampe, etc.

Two bare of silver, taken from 12 ponnds of rock from the Treesure Koy mine, of Wbite Pine, are exhibited by N. Basset, whicb, from tbe inscriptions npon them, are intended as keepsakes for his mother and sister.

CLASS XII.

The Art of Printing and Printing Presses, Lithography, Engraving, Book-binding, Paper, Type, etc.

The Art Preservative is represented chiefly at the Daily Fair Press stand of Dewey & Co., publishers of the Mining and Scientific Press, including emong other articles, the following:

A Railway cylinder press, of Englisb manufacture, (with a Yankee improvement by George T. Pracy) on wbicb the Daily Fair Press is printed; a Ruggles' Diamond card press, by Spaulding & Barto, end a small Wasbington hand pross, by E. F. Hartsborne, upon which a lad, dressed in continental costume, is engaged in working the old-fashioned inking balls and printing a fac-simile of Ben. Franklin's first paper, printed in Boston, Feb. 11, 1723.

Dewey & Co. also exhibit two frames of specimens of designing and engraving on wood, drawn and engraved by artists in the office of tbe M. & S. Press.

Two copies of antique newspapers—the *Herald of Freedom* and *Federal Advertiser*, printed in Boston, December 15th, 1788, and June 12th, 1789—the latter containing President George Washington's letter in response to a complimentary address from members of Congress, the property of Mrs. Hopkinson, of this city.

Bound copies of the first three volumes of the Daily Fair Press.

Each issue of the present volume of the Fair Press contains eight pages, forming a sheet of half the size of the N. Y. *Tribune*. It is printed daily on good quality of paper, and circulated free to all visitors. It is doubtless the largost daily newspaper ever printed and circulated gratuitously, and bas tbe widest circulation of any Fair paper ever publisbed.

As samples of newspeper printing, eleven bonnd volumes of the M. & S. Press, end copies of the Montbly and Quarterly Series of the M. & S. Press.

D. Byle exbibits the Novelty printing press, in rear of tbe Leed Works.

In the art gallery, Warren C. Butler exbibits choice specimens of wood engraving; G. W. Sbourds has also some fine wood cuts; and A. W. Stott a case of engraved cards. Cuhery & Co., and Taylor & Co. exhibit specimens of various styles of job printing; Brown & McDowell, of show card printing; and Taylor Bros., of copper plete engraving and printing.

Reilroad bulletin boerds are shown by P. G. Beem, J. G. Crocker, and W. B. Swan; also two large advertising frames by Gilmore & Van Norden. W. S. Jacobs exhibits a steamer sheet of the *Alta California* newspaper printed on silk.

The only map on exhibition is one of the farm of L. A. Gould, of Senta Clara, drawn witb a pen. Henry White, of San Mateo, exhibits a scrap-hook and journel of travels in Asia, Africa, end America; A. A. Rosenberg, specimens of California musical publicetions.

Burgess & Stratton exbibit in this department three patent music folios and four patent papsr file-holders, a Californie invention of much merit, which was illustrated and fully described in the Press of October 19th.

H. H. Bancroft & Co. exhibit a case of law books and miscellaneous publications, also diaries, blank books, writing paper, etc.

Geo. B. Hitchcock makes a very fine sbow of blank books, of bis own manufacture, all of whicb ere very creditable to his establisbment. He also exhibits letter presses, of superior manufacture, and stands for the seme.

Hicks & Co. exhibit elegant specimens of book-binding—stetely ledgers, with substantial binding, blank books of various kinds, and miscellaneous publicetions, elegently finisbed in gilt, etc.

Bartling & Kimball also exhibit specimens of book binding, executed in tbeir usually olegaut and substantial style.

Mr. Hourcade exhibits in this department a cene made of paper; Mrs. James Sullivan a box of stamps, and Mr. A. L. Stemson, one of Auer's patent cbeck cuttere.

The Paper Manufacturing Interest

Is represented by two companies—the Pioneer eetablishment of S. P. Taylor & Co., and the Saretoga Paper Mills. The former has been in operation eome twelve or fourteen years. The works are located at Taylorville, Marin County, and tbeir long and continued success have shown conclusively tbat California csn produce her owu paper, if cepitalists can only be found willing to invest the needful amonnt. The paper on exhibition, consists of Manilla and blue paper, and paper bags. Tbe texture and quality of the same is equal, if not snperior, to paper manufactured for eimilar purposes in any part of the Union; indeed, we are told tbat Taylor & Co'e wrapping paper is preferred in this market to thet of Eastern make.

The Saratoga Mills, Pfister & Co., also make a fine exhibit of etraw end Manilla papers. These mills are located a short distance southwest of Santa Clara, and have etarted, we believe, within the year just passed. There are large stocke on exbibition from both these mills. If we ere not mistaken, there are two otber paper mills in operation, or abont to go into operation, on this coast, one near Point Arenas, in Mendocino connty, and the other in Oregon. There ie room and business enougb for all. It is about time that the Pacific Coast was entirely independent of the Eastern States for both news end wrapping paper, and we trust tbat sueh euccess will attend these pioneer esteblisbments as will soon etop the outflow of money for tbese indispensable articles of merchandise.

CLASS XIII.

Vehicles for Land Conveyance.

The "Dandy Hobby-horse."

Had any one entered the Pavilion six months ago, and tben undertakeu to prophecy the character of the vebicnlar display at the approaching Fair, he would bave been very positive that both space and prestige would be monopolized by varieties of velocipedes, queer and otherwise—including of course the "coming velocipede." This, we rather regret to say, has not "come,"—to the Fair at least, for there is not a single velocipede on exhibition. One from Pickering & Davis', N. Y., is ou the records; but it has laid itself flat ageinst some friendly post wbere it is quite invisible; to see, perhaps, and not be seen,—to gaze upon tbe moving world, wbich is the unnatural mother tbat gave birtb and life to the hobby and then neglected and abandoned bim in this manner, to his own reflections npon the utility of "hobbies and tbings" being born at all.

Enougb has been demonstrated, however, to satisfy us that light vehicles of this character, perbaps witb rubber tirss, will yet answer a practical purpose, in special cases. Some of tbe three-wheeled machines may be made to do. The absence of all velocipedes in our midst, here, wbere so many ingenious ones were made, indicatss tbet the owners do not teke pride in tbsir aehievements in that direction. Perhaps somebody will try again.

Eastern Manufacturers in the Market.

It is euthentically reported tbat some of the Eastern carriage and wagon manufacturers have recently been shipping vebicles to Nevada and California by the Pacific Railroad, and delivering tbem at prices lower than tbe same could be manufactured in San Francisco or Sacramento. Kimball & Co., we learn, on the other hend, have been shipping some of their carriages to Chicego; and it is certain that our local shops can bold tbeir own, though for a time cbeap labor in the East may give the adventagee to others for wboleeale manufecturing. Except in the locel order shops carriage menufacturing, like everythiug clse, at present, is dull. The Kimball Company bave discharged the majority of their men. Casebolt & Kerr heve so large a local order department that locomotion itself would have to cease before their business would come to a etand still.

The Carriages and Their Merits.

Tbere is really a finely assorted, complete display in the vehicular line, at the Fair. We have little to say touching the superior merits of the fine carriages and buggies of the different firms, after looking at them; they are the genuine, first class American erticle, light, handy and durable, the best in tho world, excepting the English in point of durability. We hope tbat the reader has one—a Kimball four-horse—to ride in.

Casebolt & Kerr, Lerkins & Co., the Kimball Manufacturing Co., Burham, Black & Miller, and Willey are tbe exhibitors of these chariots of fortune, wbich aro either ligbt and fast, or colossal, covered and grandiose, or cosy and domestic, or antique and profoundly respectable—according to the tastes and characters of our lords and ladies. Quality and style are a matter of price. We find none of them to compare in haudiness, rcliability and cheapness to the human velocipede, the prettily chiselled two-legged vehicle, for whicb the manufacturer has never takeu out any patent.

A model brewery wagon, with platform eprings, for very heavy loeds, is shown by Paul Trievhofer, one of the fiuest wagons made for use. A milk wagon, by Lawton & Co., is well adapted.

Wood.

All the meterial is imported. If we have any wood that will do for carrieges or machines, onr mannfacturers are not aware of it, for tbey say it is all brittle and inferior. Even Oregon hard wood loses its toughness as soon as it becomes dry and seesoned. The Koa wood of the Sandwicb Islands is very herd and strong, and beeutifnl besides, but has not been tested for toughness by our manufacturers, eo fer as we are aware. If it be a fact that notbing grows here edapted to mechanicel uses, then it will be a profitable business to plant and reise certain kinds of hard wood trees—a matter alreedy begun upon in different localities in this State to tbe extent of a few acree.

Iron Wheels.

Some important inventions are brought for tbe perfection of vehicles. First is Mr. T. R. Smith's newly patented iron wheel, which bas merits tbat sufficently commend it to onr notice. There have been many futile attempts to construct irou wheels, which have bitherto generally failed because tbere were iron castings, which would break. Smith goes to work ignoring none of the laws of mecbanics. The principal object of an iron wbeel is to gain strengtb, durability, and above all to avoid contractiou hy heet—a defect of wooden wheels which a few years ago cost the U. S. Government the loss of a wbole train of wagous from falling to pieces while crossing an arid spot in Arizona. Smith's wheel is of iron tubing, etc., hub and all; contraction and expansion being fully provided for by

means of rubber packing. The two wheels and hind axle shown in the Fair have themselves undergone an extraordinary test. In connection with the two front wheels of another wagon, and under a heavy load, they were driven over the roughest places, railroad tracks and the like, to be found around this city for half a day, until the front wheels entirely gave out. Though these are heavy, the same principle will apply equally to light buggies which can be built, Mr. Smith thinks, of as light a weight, and of much more airy appearance, than the lightest now made of wood.

SPRING FACTORY.

A very worthy new industry is represented in the Fair by Beldnks & Sicotte, of the California Spring Works, located on Folsom street, near Fourth. A large furnace for heating a whole bar of steel at once, and steam machinery for drawing it out, are the leading new appliances. Heavy springs, and light as well, are the products, which are to be seen at the Fair in every variety. Another very fine exhibition of the same kind, together with a testing machine, made by Wm. B. Betts, whose works are in the rear of Casebolt & Kerr's carriage factory on Market street. Two different dump wagons, four-wheeled models, of excellent points, are shown by John Craig, a California inventiou, and by G. R. Cramer, an Eastern. The former turns up the bottom boards by means of very simple but powerful levers; the latter has the entire bed elide backwards, until it tips.

INVENTIONS.

Other meritorious inventions are Porter's improved rail for city streets; Pool & Carlton's double extension tire tightener; T. G. Walter's model for coupling vehicle shafts; B. Keiley's adjustable tongs and S. L. Pereiras' Belleville buffer and railroad spring, all of which should be looked up by those interested in such matters, as they are best understood by personal inspection.

CLASS XIV.

LEATHER AND ITS MANUFACTURES.

We claim that the Santa Cruz leather is the best of its kind, or kinds, in the world. Our manufacturers prefer it. The tanneries are located at Santa Cruz for no other reason than the superior quality of the tanbark of that region, obtained from the chestnut oak *(Quercus densiflora)* called sometimes, on account of the wet and spongy appearnnce of the wood when first cut, the water oak, which is plentiful on the seawnrd slopes, extending as far north as Mendocino, but always in or near the redwoods. There ie a fine tannery in operation at Bay View, on the San Bruno road—Manasse & Baker's,—which undertakee especially the manufacture of the finer qualities of leather; and from the specimens shown in the Fair this year, we have of the impression that an expert would pronounce the results, in part at least, successful, or equal to the best French leather imported. In softness and pliancy, the common as well as the patent leather exhibited could easily be mistaken for a French article. There is another large tannery in Napa Valley, which uses a different kind of bark, but with less favorable results. Malone & McMahon exhibit samples of excellent kip and calfskin; the raw article must be further studied in the saddlers' and shoemakers' exhibitions. One of the finest displays this year as last, is by Main & Winchester, whose productions for lavishing wealth are more tasteful than are imported. A beautiful set of harness for President Grant is in the lot.

INVENTIONS.

Not a few useful inventions might be mentioned in connection with Messrs. Main & Winchester's exhibition; an excellent double horn for ladies; a girth that is tightened by the stirrup; a wheel hub, invented by a lady, Mrs. Whiting, being merely a leather capping to place over the wheel for protection of ladies' dresses in getting in and out; a stirrup cap, which is a simple contrivance to prevent the foot from slipping through too far. The largest "bull-whacker" in the State hangs down from a lofty nail, like a serpent that it is. Other inventions to be noted are Hough-ton's Mason whip hanger; J. C. Gage's patent adjustable breast collar (worthy of examination) and Scrimgeour's patent shoe heels.

Stone & Hayden make a nearly equally splendid showing of everything in the saddlery line, especially saddle-trees. Geo. F. Thiel, of Marysville, Barr, of Sacramento, and Lawless Brothers exhibit saddles of California leather, highly ornamented.

MANUFACTURED ARTICLES,

Besides saddlery above mentioned, consist of sole leather products—trunks, belting and hose pipe of spleudid quality, exhibited by Behrendt & Co., Bakor & Hamilton, and French & Co.; and of fins leather, into shoss and boots, by L. Price, Scrimgeour, Broderick & Kast, etc.; with some fancy frames, mantol piecs and watch pockets, etc., by G. B. Falck; and leather frames, with worsted center, leather bracelots, otc., by Mrs. A. D. Baker.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for ovory issuo, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Locution; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Coals., Sierra co., Sept. 24, 30c.	Oct. 25	Nov. 15*
American, Storey co., Sept. 16. $1.50.	Oct. 19	Nov. 4
Bucklin, White Pine, Sept. 30, 5c	Nov. 6	Nov. 26*
Bullion, Storey co, Nev., Aug. 21, $10.	Pay.	Immediately
Belchor, Storey co., Oct. 21, $2 50.	Nov. 22	Dec. 11
Cala. Slate, Calaveras co., Sept. 7, $1.	Oct. 7	Oct. 28
Cons. Virginia, Storey co., Oct. 1, $1.50.	Nov. 4	Nov. 20
Coney, Amador co., Oct. 14, $5	Nov. 20	Dec. 13
Crown Point, Storey co., Oct. 15, $7.50.	Nov. 20	Dec. 10
Gen. Chloride Flat, W. P., Sept. 16, $1.	Nov. 1	Nov. 11.
California S. M., White Pine, Oct. 19, $1.50.	Nov. 22	Dec. 13.
Dancy, Lyon co., Nev., Oct. 13, $1.	Nov. 15	Dec. 4.
Etna, White Pine, Aug. 27, 15c.	Sept. 30	Oct. 20
Evening Star No. 1, White Pine, Aug. 25, 10c	Oct. 2	Oct. 22*
Empire M. & M. Co., Sept. 25, $25	Nov. 4	Nov. 24
Featherstone, White Pine, Aug. 31, 30c.	Oct. 7	Oct. 26
Chloride Flat Cons., W. P., Sept. 15, $1	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c.	Oct. 18	Nov. 5
Hearst, White Pine, Sept. 15, 50c.	Nov. 1	Nov. 22
Hope Gravel, Nevada co., Sept. 20, $1.	Oct. 25	Nov. 15
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
Julia, Virginia Dist., Oct. 15. 50c.	Nov. 18	Dec. 6.
Maxwell, Amador co., Sept. 22, $1.	Nov. 1	Nov. 24
Metropolitan, White Pine, Sept. 11, $2.50.	Oct. 7	Nov. 2
Morning Star, Alpine co., $1.50.	Nov. 1	Nov. 22
Hoge Gravel, Nevada co., Sept. 20, $1.	Oct. 25	Nov. 15
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
Julia, Virginia Dist., Oct. 15. 50c.	Nov. 18	Dec. 6.
Maxwell, Amador co., Sept. 22, $1.	Nov. 1	Nov. 24
Metropolitan, White Pine, Sept. 11, $2.50.	Oct. 7	Nov. 2
Morning Star, Alpine co., $1.50.	Nov. 1	Nov. 22
Meadow Valley, Lincoln co., Oct. 9, 25c.	Nov 11	Nov. 30.
North Bloomfield, Nevada co., Sept. 29, $5	Oct. 22	Nov. 8
Noonday, White Pine, Oct. 11, 80c.	Nov. 18	Dec. 9
North American, W. P., Sept. 27, 25c.	Nov. 1	Nov. 22*
Orig. Hid. Treasure, White Pine, Aug. 8, $2.	Oct. 4	Oct. 23
Oncida, Amador co., Oct. 5, $10	Nov. 10	Nov. 30.
Pinto, White Pine, Aug. 15.	Sale	Nov. 11
Ripon, Alpine co., Sept. 16, 25c.	Oct. 20	Nov. 6*
Siempre Viva, Mexico, Sept. 17, $1.50.	Oct. 21	Nov. 8*
Senator, Storey co., Nev., Sept. 6, 50c.	Oct. 18	Nov. 8
San Joaquin & K. R. C. Co., Oct. 5, 10c.	Nov. 8	Nov. 23
Taylor, El Dorado co., Aug. 25, 20c.	Oct. 4	Nov. 22*
Thunderbolt, White Pine, Sept. 14, 5c.	Nov. 6	
Tecumseh, Calaveras co., $5	Nov. 17	Dec. 8
U. S. Grant, Nevada co., Sept. 21, 50c.	Oct. 22	Nov. 13*
White Pine Mutual, Sept. 29, 50c.	Nov. 3	Nov. 22
Wells, White Pine, Aug. 10, 30c.	Sept. 17	Nov. 4*
Wheeler, Esmeralda co., Sept. 20, $1.	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

La Blanca, Mexico.....Annual Meeting, Oct. 30.*
Glenwood.....Meeting Oct. 27
Mineral City, White Pine, Aug. 24, 50c.....Oct. 7—Oct. 22

LATEST DIVIDENDS.

Amador Co., div. $6 per share.....Payable October 7, 1869
Alpha Cons., Storey co., Nev., div. $2....Pay. June 19, 1868
Bacon, Storey co., Nev., div.....Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.....May 10, 1869
Crown Point, dividend, $7.50.....Payable Sept. 12 1868
Chollar-Potosi, div., $1.....Payable October 8, 1869
Eureka, div. $7 50.....Payable October 8, 1869
Empire M. & M., Nev., dividend $6.. Payable May 15, 1867
Gould & Curry, div., $7.50.....Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50.....Payable July 13, 1868
Golden Chariot, Idaho, div. $3.....Payable June 15, 1868
Golden Rule, Tuolumne co., div. 50c ₱ sh.....Pay. 25, 1868
Hale & Norcross, div. $6.....Payable July 10, 1869
Imperial, Storey co., Nev., div.....Payable June 29, 1868
Industry, White Pine, div., $1.....Payable July 1, 1869
Keystone, Sierra co., div., $32.....Payable May 15, 1869
Kentuck, div., $20 per share.....Payable Oct. 10, 1869
North Star, dividend, $5.....Payable Aug. 15, 1868
Occidental, div. $2.....Payable March 2, 1869
Pacific Unassessable, div.....Payable June 18, 1868
Sand Springs Salt, dividend $1.....Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50...Payable Dec 19, 1868
Savage, Virginia, Nev, dividend, $4....Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1....Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c.....Pay. Oct. 10, 1869
Virginia & Gold Water Co., Dividend.....Payable April 16, 1869
Yellow Jacket, div., $5.....Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, October 22, 1869.			
Flour, ₱ bbl.	$6 00	@	$6 50
Do. Superfine.	4 00	@	4 50
Corn Meal, ₱ 100 lbs.	2 00	@	2 25
Wheat, ₱ 100 lbs.	1 10	@	1 55
Oats, ₱ 100 lbs.	1 10	@	1 35
Barley, ₱ 100 lbs.	85	@	1 15
Beans, ₱ 100 lbs.	2 50	@	3 50
Potatoes, ₱ 100 lbs.	75	@	1 50
Hay, ₱ ton.	8 00	@	13 00
Live Oak Wood, ₱ cord.	9 00	@	14 00
Beef, extra, dressed, ₱ lb.	7	@	10
Sheep, on foot.	2 50	@	3 00
Hogs, on foot, ₱ lb.	6	@	7
Hogs, dressed, ₱ lb.	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb.	—	@	15
Do. China.	10	@	11
Coffee, Costa Rica, ₱ lb.	18½	@	19
Do. Rio.	18½	@	19
Tea, Japan, ₱ lb.	75	@	90
Do. Greco.	60	@	1 25
Hawaiian Rice, ₱ lb.	9½	@	10
China Rice, ₱ lb.	5½	@	6
Coal Oil, ₱ gallon.	62½	@	65
Candles, ₱ lb.	16	@	18
Ranch Butter, ₱ lb.	50	@	60
Isthmus Butter, ₱ lb.	20	@	28
Cheese, California, ₱ lb.	15	@	19
Eggs, ₱ dozen	60	@	65
Lard, ₱ lb.	17	@	18
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb.	60	@	75
do. pickled, ₱ lb.	40	@	50
do. Oregon, ₱ lb.	25	@	30
do. New York, ₱ lb.	35	@	40
Cheese, ₱ lb.	20	@	25
Honey, ₱ lb.	25	@	50
Eggs, ₱ dozen.	50	@	75
Lard, ₱ lb.	20	@	22½
Hams and Bacon, ₱ lb.	—	@	25
Cranberries, ₱ gallon.	1 00	@	1 25
Potatoes, ₱ lb.	—	@	3
Potatoes, Sweet, ₱ lb.	—	@	2
Tomatoes, ₱ lb.	2	@	3
Onions, ₱ lb.	2	@	3
Apples, No. 1, ₱ lb.	4	@	5
Pears, Table, ₱ lb.	5	@	
Plums, dried, ₱ lb.	10	@	12
Peaches, dried, ₱ lb.	10	@	15
Oranges, ₱ dozen.	50	@	75
Lemons, ₱ dozen.		@	1 00
Chickens, apiece.	75	@	1 00
Turkeys, ₱ lb.	25	@	30
Soap, Pale and C. O.		@	12
Soap, Castile, ₱ lb.		@	20

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, October 22, 1869.

Financial.

The condition of our local money market remains quite unsettled. Momentary case is experienced from time to time, but there appears to be no radical change. Business is conducted on a very economical scale, and, despite the long continued stringency, lasting now for four months, we learn of no serious calamities among business men. Some few failures have occurred, but not of a character to influence other parties. Their decadence was gradual, and the result of inconsiderate speculations, while their transactions were too limited to create more than passing remark. The rains have commenced in downright earnest. Within the last three or four days a large quantity of water has fallen, and it is possible that some damage has been done to the cords of wheat piled up in various unprotected localities.

An evening contemporary published a financial article, entitled, "What is the value of a hundred dollars?" which is well reasoned until the writer ventures upon a suggestion, when he involuntarily exposes a superficial view of the subject. He says: "The Government uses two kinds of currency—specie and paper. By positively refusing to receive the latter for customs, it lends its influence to depreciate the very money which it has created; that is, if a thing having no intrinsic value may be called money." There are two objections to the quoted sentence: the first is, Government has $1,400,000,000 of bonds in Europe, upon which it is compelled to pay $84,000,000 per annum, by way of interest, in gold. If it were to accept legal tenders for customs, where would it find the gold to pay this annual obligation? The second misstatement is, that Government paper, or promise to pay, has no intrinsic value. Whatever it will fetch in the market; whatever it will purchase; whatever it can be exchanged for—expresses its intrinsic value as money, for the time being. Its value is fluctuating, but this is more the result of Wall street cornering operations than from any increase or decrease in its actual value by reason of legitimate supply and demand. We also find the following paragraph in the same article: "Perhapa the first step toward relief would be gained by a national issue of demand notes for the accommodation of all persons who chose to deposit specie in the Federal Treasury." But, if a person has specie, what does he want with the notes? What relief would a note give him more than he already enjoys in his coin? And, if he have no specie, where is he to get a demand note? The volume of paper currency afloat is already sufficiently large; too large to be as valuable as it would he were it smaller. The one great trouble consists in its deficiency of purchasing power when compared with coin; and much of this defect is a result of its volume.

The demand for money is active, and more is going out than coming into bank. Rates on first-class indorsed paper, for call loans, are 1¼@1½ per cent. per month, but on the street the range is 2@2¼. Bullion is in light supply, with small demand. We quote gold hara at 850; silver hars, from par to ¼ per cent. off; currency hills on Atlantic cities pay 28@28⅛ per cent. premium on gold; coin sight drafts, 1⅛ per cent. premium; telegraphic transfers, 2 per cent. premium; sterling exchange, 48¾d.; commercial hills, 49½@49⅝d.; Mexican dollars, 4⅛@5 per cent. premium; gold in New York, Oct. 21at, 131; sterling exchange, 109¾@109¾; legal tenders in San Francisco, 75½@75¾.

Many of the New York and Brooklyn merchant princes have got Mr. Boutwell after them with sharp research into their incomes. It seems that great discrepancies exist between the exhibits they have furnished to the assessors of the places where they do business and the exhibits given to those of the places where they dwell, and these facts coming to the Secretary's knowledge, he has ordered his collectors to hunt up the matter and compel just returns. In pursuance of this order, the collectors have obtained results showing that many merchants have made sales to the extent of $200,000 and $400,000, while they gave in their incomes at $4,000 to $6,000 per annum. These sums are not regarded as sufficient profits on such extensive sales, and strict examinatiou is to he had for the purpose of determining whether they sold those goods helow cost, at cost, or for so trifling a profit as indicated in their income exhihits. The Secretary will not confine his investigations to New York and Brooklyn, but will extend them to other cities. The Income Tax has always heen ohnoxious to our ideas, hut so long as it exists and the law is in operation, let it he strictly enforced, especially against those who are most able to comply with its requirements. The same argument is applicable to usury laws. Some time ago an attempt was made to enforce the usury laws of New York State, hut it was met at the outset with all sorts of opposition from leading financial journals, which denounced the suits instituted by the authorities as unjust and oppressive, hecause no previous effort had ever heen made to give it practical effect. Nothing daunted, the authorities remained inflexihle, and the cases were brought hefore the proper tribunal. Immediately, the same journals commenced a series of special pleadings that mercy should he extended toward the culprits; that they should he let off easily, and the law permitted to fall upon them like a gentle snow-wreath. We are sorry to add, that these petitions found weight, and the usurers were allowed to go with merely nominal penalties. Then followed the logical result: The law was made a farce of and laughed at. The same culprits again entered the field and recommenced their operations on a scale of magnitude never hefore known in our financial system. The whole husiness of the country was arrested, and serious injury done to many important interests. We know of no steps heing takcn to enforce the law.

From Europe, we learn of some commotieu in the financial circles of England. Mr. Lowe, Chancellor of the exchequer, has submitted a proposition to dehase the gold coin of the realm hy decreasing the quantity of gold in the sovereign from 113 to 112 grains, which has elicited sharp and decisive criticism from leading financial men, prominent among whom is Lord Overstone, hetter known as Lloyd Jones. The Chancellor has also proposed that the cost of mintage and a charge of one per cent., under the title of seignorage, shall he deducted from the coin itself; and this proposition is sought to he supported hy the fallacious doctrine that although one grain of gold shall he taken from the sovereign, its purchasing power will remain undiminished! This is queer doctrine to emanate from so high a functionary, and indicates no very great possession of common sense. It is like taking one eye from a man's head and declaring that his power of vision remains unimpaired. The returns of the Bank of England for the week ending September 29th show a diminution in hullion to the extent of £1,192,093, as compared with the returns of the previous week. This indicates a greater activity in the money market, probably caused hy harvesting the crops, which are reported fair, in general, with less than an average in wheat. The stock of hullion in the Bank of France, at the close of September, was equal to $245,000,000, in round numhers.

City Stocks.

The market for miscellaneous securities has been quiet since our last similar reference. Small sales of Spring Valley Water Co. stock were made at $62 75@62 25, and San Francisco Gas Co. at $84 50@85 per share. A sale of 44 shares Pacific Union Express stock is announced at $1 per share.

Mining Share Market.

The mining share market exhihited considerahle activity since our last issue, a numher of prominent stocks having improved over closing quotations of last week, while as a general thing no material recession has characterized the list usually dealt in. Sales have also augmented, the largest transactions embracing Chollar-Potosi, Savage, Sierra Nevada, and Yellow Jacket.

CHOLLAR-POTOSI—has improved some, under large sales. During the week ending October 15th, 965 tons of ore were extracted, against a yield of 1,000 tons the previous week. The drift running north-east on the 18th floor shows the same streak of ore found on the track floor of the new tunnel, the vein at this point heing six feet wide. The connection with the track floor of the new tunnel was made on the 18th. The huildings over the shaft have heen completed, and the hoisting works, it is expected, will he in running order in the course of a few weeks.

HALE & NORCROSS—exhihits quite an advance toward the close, the sales heing on the increase. The report for the week ending October 16th shows an ore product of 1,265 tons, against 1,206 tons the previous week. Of the 1,265 tons, 449½ were from the upper mine, and 815½ from the lower mine. The station at the sixth level is nearly completed, and a drift westward for the vein will he immediately carried forward. A drift has heen started north to cut the vein at a point north of the shaft. The various hreasts throughout the mine are reported as looking well.

GOULD & CURRY—was in less request than the previous week. For the week ending October 18th, 314½ tons of ore were extracted, against 359½ the previous week. The Old North mine yields most of the ore extracted, the quality heing hetter than was expected. At the seventh station the drift south is 135 feet in length, and the drift running north 85 feet. No indications of ore.

SIERRA NEVADA—was in the market to a large extent, rising to $18 50, then falling to a considerahle extent. They are upward of 35 feet in the vein, which is reported to show an average width of ten feet.——The main drift of the OPHIR mine is upward of 735 feet in length, and the northwest drift has heen extended more than 170 feet.——CROWN POINT levied an assessment of $7 60 per share on the 15th inst.——IMPERIAL reports a hullion return of $14,536 for the month of Septemher.——BELCHER levied au assesament of $2 50 per share on the 21st inst.

From the White Pine *News* of the 16th inst. we learn the following improhable report regarding ons of the most promiuent White Pine mines:

"AURORA CONSOLIDATED—sinking a shaft in the upper works, Aurora North, to he tapped hy the tunnel from the North Iceberg. Down nearly 100 feet, and expect to complete the connection in ahout a week. This will be a valuable work, ohviating the now existing necessity of teaming away up ou the steep side of the mountain. After this connection, the ore will all he delivered, for years, from the tunnel, on a level with Union street. Gov. Blasdel sold these mines, a few days ago, for $237,000, coin, to Capt. Frank Drake. The sale covers, under the Aurora Consolidated, the following mines: Aurora North, Earl, Ward Beecher, North Iceberg, and one or two others. A strike of extraordinarily rich ore was made, a few days ago, in the works of the Autumn Company, which was lately ousted hy law. Samples of the ores range from $5,000 to $8,060—the latter, of course, choice selections.——The EARL mine, helonging to the Aurora Consolidated Company, is still taking out 35 to 40 tons daily of ore, which requires no asserting, hut is sent to mill as mined. This amount is taken out while sinking, and the heat is on the hottom. The mine is now one of the very hest, if not, at present, the very best in our list. CONSOLIDATED CHLORIDE FLAT is shipping large amounts of ore, as usual, to the Manhattan mill. The hullion yield of the mill is an average of $1,700 to $1,800 daily and has been for the past two months.——ORIGINAL HIDDEN TREASURE continues shipping ore to the Dayton mill, and raising ore from two different places in the mine—the North Open Cut and the South Incline—a hetter average grade of ore than ever hefore, requiring less work in the assorting.——The NOONDAY shaft is down 100 feet, and a drift east somewhere ahout 80 feet, where a large hody of excellent ore was encountered."

THE Glasgow Iron and Metal Importing Company is one of the solid institutions of this city. Their supplies on hand at Nos. 21 and 23 Fremont street, are large and first class, embracing, among other articles, bar and bundle iron, cast steel, plate and sheet iron, boiler flues, pig IRON, gas and water pipe, Cumberland coal, etc.

ASSAYS and reliable working tests of ores can be had of G. W. Strong & Co., No. 10 Stevenson street.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Leviathan.—*Chronicle*, Oct. 9th: Capt. Jones arrived on Monday from San Francisco, where he completed arrangements for smelting works. These works consist of a 15-horse power engine, a blower, three furnaces and a portable sawmill. The firebrick necessary has been shipped with the machinery, and will be at the mine in a few days. The engine arrived at Reno on Wednesday.

The Mountain.—The work in this tunnel is progressing finely, and never have been so flattering. Small strata of quartz are cut almost daily.

Tarshish.—*Miner*, 9th: This company is making a start at the main tunnel, and will be under full headway in a few days.

Good Work.—The No. 3 tunnel of the M. C. M. Co. has been pushed in this week so far, at the rate of over 20 ft. for the full week, working only four men. As the ore increases in the rock it becomes softer and more friable.

Indications in the Imperial tunnel are said to be flattering. The Florence lode is nearer than was estimated.

The Mountain No. 1 tunnel is 1,707 feet and the indications, according to the Supt., flattering.

Copper.—Wm. Willis, in Hope Valley, shows us copper matte in a blacksmith's forge, out of ore from his vein.

AMADOR COUNTY.

Hinkley.—This mine has passed out again. Some weeks ago, two of our miners made an agreement to work it on shares—they to receive one-half after paying expenses. Last week they struck a "pocket" from which they took out over $1,600. This mine has already yielded over $16,000.

MARIPOSA COUNY.

Bear Valley.—*Gazette*, 15th: We are informed that the parties running the tunnel at the Maggie Russell vein near Bear Valley, have, after going 100 feet, struck a 3-foot vein with promising indications, the quartz exhibiting free gold. Should the prospects hold out, a mill will be erected.

NEVADA COUNTY.

Slate Creek Ledge.—*Gazette*, 12th: A crushing of ninety-one loads at Perrin's mill cleaned up on Saturday, yielded $5,271.35. The cost of mining, hauling and crushing the rock was $591.50, leaving a profit of $3,679.85.

William Penn.—15th: This mine started up on Monday, having been shut down for several weeks for the purpose of putting in new pumping machinery. The company now propose to sink the shaft 100 feet below the present level, which is 164 feet below the surface.

Mill to be Moved.—Layton will move his quartz mill at Union Hill to the Greenhorn claim six miles east of Grass Valley. Three hundred tons of rock from this claim was crushed within the last year at Layton's mill and paid well. The ledge is from three to four feet wide.

George Batter's Gold Mining Co.—This company has been organized for the purpose of working the ledge on Wolf creek, one-fourth of a mile west of Union Hill, located several years ago by J. K. Sale.

Meadow Lake, 18th: Churchill and Doling have erected a furnace and mill. The first crushing was two tuns of ore from the Wisconsin mine, which yields nothing by the ordinary process. By the new process, the two tons yielded over three and a quarter ounces, which assayed .917 fine, and amounted to over $62. The ore is first roasted, and then crushed in a battery, and the cost of reduction will not exceed eight dollars a ton. Encouraged by this success, the Mohawk and Montreal Company have made arrangements to erect three furnaces on the same plan.

Deer Creek.—*Transcript*, 12th: Mr. Stranahan has forty-five men digging ditches, and fitting up claims, and proposes this Fall and Winter to run three sets of diggings. The Red Diamond and other claims in the vicinity are looking well, and only require water to make them pay.

Pittsburg.—Same of 15th: On Wednesday, four tons crushed, paid $199 per ton in free gold, and yielded a ton and a half of sulphurets, which assay $250 per ton. The lead is better than ever, and is becoming larger.

American.—Sweetland Cor. of the *National*, 11th: This mine has, in addition to the latest improvements in hydraulic mining, three mills. One is an eight-stamp mill to crush cement; the other two to grind sand and gravel. In this mine 300 and 400 kegs of powder are frequently exploded. The company are now running two drifts, the main one of each being 100 feet, and the arms 50 feet each way, forming a T; and in each of these they intend to explode 500 kegs of powder. A new tunnel is being run, which will be 5,000 feet in length, and will cost nearly $60,000. It will be 200 feet below the present tunnel on the bed-rock. The principal owners are Croll and Brown. The average clean-up is $25,000 a month.

Buckeye.—Same: The average monthly clean-up is $12,000. The mine is divided into ten shares, of which Evans and Stidger are the largest owners. The company have just completed an extension of their tunnel, and have raised a new shaft. The tunnel is 1,200 feet in length. Negotiations are pending for the sale of this mine to a London Company for $200,000. Persons acting for the London Company have four months in which to consummate the purchase.

Manzanita.—Same: This mine, formerly known as the "Kentucky," owned by Houston, Firth, Judson and others, is the largest in the vicinity, comprising in all 180 claims, and presenting a perpendicular face of 4,000 feet in length and 150 in height. It is not paying so largely, however, as some of the smaller Sweetland claims, the average clean-up being only $3,000 a month.

Tail Sluices.—Same: The Buckeye have some extensive sluices, which catch the water from three mines, "Manzanita," "Chinese" diggings and the "Buckeye." The average clean-up is $1,200 a month.

Wisconsin Mine.—Grass Valley *Union*, 13th; The new mill will start up to-day. There are eight stamps, with room and shafting for eight more. The ledge is looking well, growing in width as the miners go down.

PLACER COUNTY.

Rich Specimen.—*Stars and Stripes:* Wm. Quick, of the Evening Star quartz mine at Rock Creek, had on exhibition at Gordon's store last Sunday, a magnificent specimen of gold and quartz, two inches in length, and nearly 1½ inches in thickness. A large amount of free gold was taken from the ledge that day, though the specimen referred to was the finest for exhibition.

The *Herald* of the 16th quotes this, and adds: We are informed since our neighbor penned the above, that the last four pans taken from the shaft averaged $400 to the pan, and that the refuse quartz taken from this mine will mill, ordinary average process, full $50 per ton. Gen. J. B. Taylor, Wm. Quick, Heenan & Co., are the owners of the claim.

Quartz Mill Burned.—On Wednesday Menter, Laraby & Co's 6-stamp quartz mill on Crosby's ranch, near Whisky Diggings, was completely destroyed by fire, including the chlorination works. It is believed to be the work of an incendiary.

PLUMAS COUNTY.

Good Pay.—Quincy *National*, 9th: Barker, Wilbur & Bradey, on Mill Creek, some two miles from his place, cleaned up this week, for a 30 days' run, $609.69.

SHASTA COUNTY.

South Fork Mines.—Red Bluff *Sentinel*, 9th: These mines in Shasta County, 30 miles from this place, are again attracting attention. There have been numerous tests made during the summer, and in no case has the yield been less than $40 per ton, and generally from $200 to $800, and some as high as $2,000 per ton. There has been considerable of this rock sold for shipment to Europe for from $200 to $400 per ton, delivered in San Francisco. We have been informed that a San Francisco Co. have proposed to put up a mill with 15 stamps, with capacity for 40, which they would add as soon as business demanded; provided, the miners and claim owners will present them with 1,000 tons of rock as a bonus. The company then agreeing to make it a custom mill, and run exclusively on custom work for $25 per ton. Mr. Rothwell, one of the oldest miners, informs us that there is but little doubt the offer will be accepted, as the miners propose to do the work of taking out the rock free of charge, if the citizens and others interested in the development of these mines will but furnish them with tools, powder and provisions.

Clear Creek.—Same of 16th: The news from these mines is cheering. Mr. Higinbotham informs us that a new ledge has been struck, which promises to be the richest in that district.

TRINITY COUNTY.

East Fork.—*Journal*, Oct. 9th: At the mouth of Rich Gulch, Mr. Engle has an arastra, where he crushes the quartz from the ledge found two years ago. The vein is a half mile distant upon the mountain side and shows very rich rock. In almost any of the quartz piled up for crushing, gold can be found, and in many pieces it is visible.

Water Across Trinity.—McGillivray is taking water from his Cañon Creek ditch across Trinity River to supply his sawmill and mining claim. The water is to be conveyed through 15-inch iron pipe over a wire suspension, at a point some distance above his residence. About 2,000 ft. of pipe will be used.

New River Country.—Same of 16th: The mines commence three or four miles from the foot of the mountain, and extend nearly to the junction with Trinity. There are not over a dozen white miners in the whole New River country, and they are scattered in companies of two and three over a range 20 or 25 miles long. There are plenty of places good for small wages—say from $2 to $5 a day, but the old settlers prefer generally to prospect for something better. There are a few Chinamen near the forks with their rockers. Five miles below the forks, Mr. Caraway has found a quartz ledge which prospects very well. There are indications of paying quartz in several places.

Rattlesnake.—Cristiansen & Co. have a big claim, and will do well when water comes.

Minersville.—We learn that work is being done on the Little Mule Creek, where the big strike was made last winter. Weeden & Co. expect to realize pay soon.

The Big Flume.—The flume will be completed as far as was contemplated this season in ten days or two weeks.

TUOLUMNE COUNTY.

Confidence Mill.—Sonora *Democrat*, 16th: The clean-up made on Saturday yielded $4,300, for a run of six days.

YUBA COUNTY.

Pennsylvania Mining Co.—*Appeal*, 14th: The Trustees having ascertained the amount of liabilities, have rescinded the assessment of $2 per share, and levied another one of $5, which will liquidate the entire indebtedness.

Arizona.

The Prospects.—Prescott *Miner*, Oct. 2d: Although, at present, there is not a mill nor a sluice running in this immediate vicinity, we wouldn't trade the Sierra Prieta and its mines for White Pine and the balance of Eastern Nevada. While not to exceed sixty miles in length, and twenty-five in width, it is know to contain at least one hundred quartz lodes of sufficient richness to pay handsomely for working. It is covered, from one end to the other, with a thick growth of timber, is tolerable well watered, exceedingly well grassed, and is blessed with a healthy climate. Until recently, not a single *miner or mill man* has visited us. Mills were erected in a manner that was better calculated to lose gold than to save it. We now feel that a more intelligent era has opened. By persistent effort we have succeeded in attracting considerable capital and sufficient brains to the country to demonstrate that quartz mills can be run with profit. We have great faith in the future of our Territory.

Big Bug Mill.—Steam will be raised in a day or two. Mr. Heslep thinks he will encounter no difficulty in making the ores pay handsomely. Messrs. Hitchcock, Gray and Wunderlich are now at the mill.

Wickenburg.—Mr. Grant says that both the Wickenburg mills were running and paying well when he left there.

Yellow Pine and Clarke.—The Visalia *Delta* confirms the last week's report, and adds that there is an abundance of wood and water within reach of the mines.

The *Arizonian* says: The mining excitement is still at fever beat. Numerous mines are said to have been discovered, and from specimens which we have seen, we are convinced that at least *some* very rich mines have been found. Several parties are still among the hills prospecting.

Idaho.

Loon Creek.—*Statesman*, 7th: Marion Clark, just from Oro Grande, says he is satisfied that the new discovery is better than Loon Creek, and more extensive. Dr. Wilson of Placerville, told Mr. Clark that there were four or five creeks putting into the main stream, all of which prospected well. They got in the bills fifty to sixty cents to the pan. Dr. Wilson considers the prospects as good as those of the Basin when first discovered. The miners who have got on the channel are taking out big money. Clark says he knew a man who bought an unprospected claim down the creek for a hundred dollars, and in a short time after sunk a hole, and panned out his hundred dollars, all in one day. Mr. Clark is not an excitable man, but inclined to "go slow;" and he is of the opinion that it will next year be *the* mining excitement of the Pacific coast.

Same of 12th: Our correspondent writing from Oro Grande October 3d says: In claim No. 28 they struck a prospect yesterday of $20 to the pan.

The last report from the Yellow Jacket excitement was to the effect that the whole thing was probably a bilk. The 300 stampeders had as yet found no pay.

Alturas County.—Letter to same from Rocky Bar: At Bonaparte Hill, Mr. Lincoln has completed a satisfactory run of 50 tons from the Ebel mine, and gone to New York for the winter. Mr. L. keeps the result to himself; but parties who worked for him and saw the amalgam, say it was about $50 per ton. M. G. Moore is crushing ten or twelve tons of the richest ore I have seen for many years. It is from the old Idaho, and will average $130 to $150 per ton. G. F. Settle is getting out ore from a ledge on Idaho Hill that will pay at least $100 per ton. Mr. Settle expects to keep at work until the cold weather stops him, and will make a handsome little stake yet this fall. Guss. Kraner will crush a few tons from the Hard Up, said to be very rich. L. C. Shearer, J. D. Goodrich, Wm. Miller and Mr. Wakefield will all do a little something in that line this month, while Jackson, Bailey & Wheat will bring up the rear, and close operations for this fall on Bear Creek.

Red Warrior.—Same: The Wide West mine never looked so well as now. They have a solid ledge of very rich quartz in their lower level, which one of the workmen told me covered the entire width of the stope. The mill starts up to-day, and will run all winter if good miners can be hired in sufficient numbers to keep it supplied with ore.

Atlanta and Yuba.—Same: The Monarch Co. on the Atlanta ledge and private parties on the Leonora are at work. There are, I am told, negotiations going on now for the purchase of quite a number of these Yuba mines, by foreign capitalists, for cash. Wm. Clemens is still working his arastra, crushing ore from the Minerva and making plenty of money. J. D. Heath, J. B. Barnhart and others, are also doing work.

Owyhee.—*Wave*, 14th: The Allison mine is producing an extra quality of rich rock. Captain Richards, the foreman, has made all his underground connections, according to calculation, and the ground is in good shape. In the Keystone, the rock already taken out, amounting to about two tons, makes a creditable showing in black sulphurets, as well as an occasional spot where free gold is visible. The shaft is quite large, and is now down some four feet below the surface of the bed rock in the creek, and exposes a ledge of two feet.

Montana.

Huge Nugget.—Helena *Gazette*, Oct. 7th: We were shown a nugget which weighed 50 ounces, worth $900, taken out of the claim of Marks, Cooper & Co., on Thursday last, in Confederate Gulch. This company have for a considerable time past found chunks of gold varying from five to fifteen and twenty ounces, but this throws all in the shade.

Mining Ground Laid Over.—At a meeting of the miners of Tucker Gulch, Pine District, held yesterday, it was resolved that all the claims be laid over until the first Monday in May, 1870.

Premium Quartz.—The Territorial Fair judges awarded the first premium for the richest silver-bearing quartz to specimens from the S. C. Day lode, in the Moose Creek District, near Highland. The owners are Dr. S. C. Day and B. S. Harvey. The lead has been sunk on 100 feet, and some of the picked rock has yielded by working process, as high as $1 to the pound—$2,000 to the ton.

New Discoveries.—The scarcity of water has set our miners prospecting. Hence the late strikes. The new digging on the Boulder are somewhere on the south side of the valley. In a tributary of Mitchell's Gulch, miles of claims have been staked off, and although water is very scarce, we are informed that most extravagant returns have been made in a few hours' work with a common rocker; even one pound troy has been mentioned as the run for two hours. We think there need be no fear on account of the future of Montana.

Phillipsburg.—Cor. of *New North West*, Oct. 8th: Work is slowly progressing, and considerable very rich ore coming out. Saunders' Mining Co. have employed a force of men on the Speckled Trout, and commenced operations to-day. They are erecting a crusher and separator. After dressing, the rock will be sent East for smelting.

Nevada.

COPE DISTRICT.

Ore.—Elko *Independent*, 13th: On Monday, 1,200 pounds of fine ore were shipped to San Francisco by the freight train. It is from the Mountain City mine, and will probably work $1,000 per ton.

Mountain City.—Same, 16th: Late advices are encouraging. Building is going on rapidly. The mines are developing well, and late discoveries are reported that bid fair to open into handsome mines.

The Mountain City correspondent of the Silver City *Ware*, Oct. 14th, says: Mr. Lytle, of your town, is bringing in a ditch to supply the placer mines. It will soon be completed, and will cost $10,000. He has also opened a toll road over the mountain. Dick Tregaskis is here. Drow & Co.'s mill is on the way. The population of this town and neighborhood is some 700. Goods are coming in and provisions are abundant. Plenty of firewood $8 to $12 per cord.

MINERAL HILL DISTRICT.

Quick Returns.—*Independent*, 12th: The mines of Mineral Hill have already returned to their owners over $23,000. Of this, $6,000 was from float rock, picked on the hill side by Indians, hired for the work. The ores have been hauled to Austin for reduction, and the cost of mining, hauling and reducing has only been eighty dollars per ton.

Ore from Mineral Hill.—*Reveille*, 16th: This morning John Sheehey laid upon our table specimens from the Live Yankee. The ore exhibits chloride of silver. Mr. Sheehey informed us that the company had sent nine tons, selected from the same number of claims, to the Manhattan mill in this city for reduction, the yield of which was at the rate of $350 per ton.

REESE RIVER.

Troubles.—The *Reveille*, of the 14th, summarizes the bad luck of Austin in a column editorial. Just as the place had got over White Pine and the Railroad, and had begun to move forward again, the Bank stopped. This was a stunner. But she rallied. Then the Lane & Fuller property was sold, and its mines and mills were closed, throwing more than a hundred men out of employment. Next, the President of the Manhattan Co. telegraphed from New York to stop work "until taxes and labor be reduced." A hundred and fifty men were deprived of work by this. The reason of the move is not apparent. It may mean a reduction of wages, or a long idleness followed by introduction of Chinese labor. Time will show.

Trojan.—It is said that this mine, which has been some time closed, will be opened to-day.

Works to be Shipped.—The contract for shifting the hoisting apparatus, etc., from the grounds of the Stranger mine to those of the Toiyabe Company, has been awarded.

Bullion.—18th: During the week ending Saturday, the 9th inst., the following amounts of bullion were produced: Manhattan mill, 16,880 ounces; Mettacom mill, 12,600 ounces.

WASHOE.

Succor.—*Enterprise*, 17th: This mine is improving rapidly. In the lower tunnel a day or two since, they struck a body of ore six feet in width, which works by gold process $20 to $22 per ton. The company will be able to pay dividends in 60 days.

Crown Point.—No ore is being taken out at present. At the 1 000-foot level a small streak was found; at the 1,100 level they drifted up against the east wall and found nothing. The pay streak has evidently taken a "slant."

Occidental.—Good progress in the lower tunnel. They are running in ledge matter, that is rock inside of the fissure, and occasionally strike detached streaks and branches of ore. Some of these assay as high as $60. In their upper works they have lately struck ore, the best ever found in the mine.

Lady Bryan.—In the Lady Bryan a very rich and important development has been made in a cross-cut to the west from the end of the south drift. At this point they have cut into a magnificent body of ore to the distance of 10 ft., and were not yet through it yesterday. They are crushing from this body of ore in their own mill, and assays of pulp from the battery run up to $60, and the yield will be about $40.

Sierra Nevada.—The white ledge struck in the winze from the car track level appears likely to prove valuable. It contains much free gold. In the southwest drift magnificent ore has been found.

Irving.—Work will probably be resumed shortly, as we observe that M. L. Winn, the principal owner, has invented a shampooing machine, the like of which has never before been seen.

Chollar-Potosi.—In this mine rather more than the usual amount of ore is being raised, and it has much improved in quality. The new hoisting machinery is being set up.

Ophir.—The Ophir, night before last, struck a stream of twelve inches of water. This, however, will prove no obstacle to the work.

Hale & Norcross.—A station has been established on the 1,200-foot level. About 160 tons of ore are being taken out per day. The vein cut by the east drift on the 500-foot level is improving.

Alpha.—The Company are running a drift north from the 1,100-foot level of the Imperial. The distance to run is 130 feet.

Savage.—The rock is hard. Drifting north and south on the ledge is still carried on. They are taking out from 60 to 80 tons of ore per day.

Virginia Consolinaten.—The shaft had reached 340 feet yesterday. The rock is becoming softer, though blasting is necessary.

Bullion.—No strike has been made; though they have an immense body of quartz. They are drifting about through the vein in search of ore.

Overman.—At the 400-foot level this mine is yielding ore that assays $40 per ton. At the 500-foot level the ore is looking better, and a small body lately found in the 300-foot level promises well.

Caledonia.—Work is about to be resumed on this old mine, situated some distance below Gold Hill, on the Comstock range.

WHITE PINE.

Weekly Mining Review.—*News*, Oct, 16th: Mine managers are preparing for winter. Additional teams are put on continually, and the loads of ore going to mill are wonderful, for bulk, number, and richness. Mill men wish to increase the stock of ore at their own dumps, from the over-fattened piles on Treasure Hill. However, if sleighing is good, teaming will be easy, the grade being in most cases descending.

The *Empire* of the 17th, says: Several strikes have been made during the week. National Tunnel, above Pocotille Flat, penetrated Treasure Mountain 270 feet, and struck good ore 350 below the surface. The Eastern Slope, near by, is also in ledge matter which promises well. Later, ore assaying $5,000 per ton was struck by the Aurora South in the Autumn pit, and yesterday the Potts, below the Rice grade, struck a fine deposit, after passing through 120 feet of solid slate. The ledge has been penetrated two feet, and the strike is one of the most valuable made for some time.

Bullion.—*News*, 16th: Shipments for the week light—$14,647.61 from this city and $13,240.41 from Hamilton and Shermantown—$27,888.02 in all. Large shipments last week, and several large ones to make in a few days, leave this week's export less by two-thirds than usual....*Empire*, 11th: Our bullion shipments, aggregating $53,473.21, fall a little short of last week's work, but the amount of silver awaiting shipment and in pulp at the mills will more than make up the deficit.

Items.—*Empire*, The Fay mine difficulties are settled....The Maria Louise ore yields $225 to the ton in bullion in silver, besides the lead....The Radical shaft is down 65 feet, and 100 tons ore on dump. The Montez, on Argyle Hill, shows a magnificent mine of 21 feet in thickness with perfectly defined walls, and the whole body of ore will pay in the mill from $65 to $90 per ton....Aurora Consolidated extracts 75 tons ore per day, and ships most of it to mill....The Earl shaft, down 85 feet, has $65-ore in sight for 12 months' work. ....Tregloan's mill will start up on Iceberg ore in a day or two....The Consol. Chloride has 1,600 tons of $55-ore on dump at the Manhattan mill....Pogonip and Othello ships 12 tons of ore to mill daily. On the dump it has 1,000 tons....Kobler mill will add another 10 stamps. The machinery is already on the ground....Eberhardt sacks 16 tons ore daily. Crushes 12 tons daily, worth $110 per ton....The Oasis mill turned out $33,000 last month in silver bricks.

New Mexico.

The New Placers.—Santa Fé *Post*, Oct. 2d: Ex-Gov. Mitchell arrived on Monday, and brings encouraging news from the placers. The Governor represents the Candelaria Mining Co. He brought with him the result of three days' labor, which was 47 oz. 7 dwt. and 6 grs. of gold, valued at about $1,000, taken from 21 tons of quartz. The company's base of operations is at the New Placer, in this county, 36 miles from Santa Fé.

Jules Favre has been swindled out of 5,000 francs by a confidence man. Parisian confidence men will find no Favre henceforth.

Agricultural Manufacturing Establishments in Alameda County.

Foundry and Shops of Davidson & Co.

During my journeyings last week, I visited the above named establishment at San Leandro, Alameda Co., where the *Eureka Self-Raising Gang Plow*, and several other useful farming implements are made. Mr. G. A. Davidson, the inventor and patentee of this gang plow, claims superiority over all other gang plows in several particulars, and I was so interested in his ingenious devices that I will attempt a description of them. The frame-work, seat, etc., differs little from common gang plows. The advantages are: 1st. The lightness and strength combined are certainly most desirable. 2d. The axle is straight, with arms which attach to the frame, for raising and lowering the plows. 3d. To plow at any desired depth, and *run the plow level*, the axle on the land side can be raised or lowered in a perpendicular slide, easily graded with a set-screw, without changing the set of the axle. 4th. To raise the plows from the ground without the exercise of muscular force by the driver, the lever attaches with a clutch, which instantly connects the axle with the hub by a slight inward movement which any boy can apply, when the motion of the wheel turns the plows out of the ground, and a curved slide opposite the ratchet throws off the grapple and fastens the lever in the ratchet at the same time. It will be seen that this relieves the driver of the heavy work, and allows him to give his whole attention to his team, in turning at the ends of furrows, at the very moment when it is most required.

Davidson & Co. evince that energy that deserves and will win success; and their work is but to be seen to be appreciated.

Baker & Hamilton's Works.

I also visited the establisbment of the above named firm, at San Leandro, and was much surprised to find so large a manufactory of agricultural implements on this coast. The scene presented in the shop is an extremely busy and interesting one. The building is about 100x200 feet in size, and comprises a foundry, blacksmith shop, machine shop, and wood-working department. Another building across the street is used as a paint shop. About forty men are employed altogether. The fires in the blacksmith shop—ten in number—are supplied with a power blast, and being placed in a row with twenty men hammering away in front of them, present a very cheerful and business like aspect. The foundry employs five men. In the machine shop, we found the usual supply of lathes, drills, screw-cutting machines, punches, shears and the like. In the wood shop I saw an excellent Gray & Wood's Planer, two completely equipped circular saws, a jig saw, a boring machine with an improved table, which can be adjusted to allow of boring in any conceivable direction or at any angle or depth, and last, though not least, a machine for boring out the hubs of wagon wheels, for the reception of the boxes. This machine appeared to me to do its work in an unusually satisfactory manner. It bored the hole exactly in the center of the wheel (not the center of the hub necessarily) and any desired taper to fit the box and precisely square to the face of the wheel, besides cutting the recess in either end of the hub for the nut and washer. The machine was gotten up in the shop by one of the workmen, Mr. J. Shepherd, and saves the labor of at least five or six men. A steam engine is the motor.

The company are engaged chiefly at present on the Sweepstake Gang Plow (from which it takes its name), spoken of at length in a late number of the Press. We were assured by the foreman that they had one thousand under way, and that nearly that number were sold last year; and that at present, even with their large force, they were behind their orders. In addition to gang plows, they manufacture hay presses, cultivators, single plows, an improved broadcast seed-sower, harrows, etc., etc. The establishment is owned by Baker & Hamilton, hardware dealers, of San Francisco and Sacramento, who for their energy and enterprise deserve their well-established success.

Smyth's Shop at San Lorenzo.

We next stepped into the shop of Mr. Henry Smyth, at San Lorenzo. Mr. Smyth is one of our oldest and best mechanics, and his inventions are among the most worthy we have seen. Established as early as 1853, he has been constantly engaged in repairing, manufacturing, and in improving agricultural implements. With a good steam engine, and much other excellent machinery; he runs five fires, and employs 17 men. So well known and appreciated is his work, that he is crowded to supply the increasing demand. He has no agents, but disposes of everything at home.

Mr. Smyth is the inventor of a gang plow that deserves more than a passing notice. It has a double crank axle, and the ordinary frame. The novel features of this gang plow are: 1st, To regulate the level at any desired depth on the land side, is a clutch connecting the crank with the axle, which allows the axle to be raised at will, and it is confined in place by the axle nut. 2d, For raising and lowering the plows, a crank lever with an endless screw, connected with the axle by a gear wheel. This is worked with great ease and accuracy, and will grade the plows to cut deep or shallow.

Another invention of Mr. Smyth's is a very simple application of a lever to his cultivators, for instantly raising or lowering them at pleasure. He also makes single plows, harrows and farming tools.

Another invention of Mr. Smyth's interested me. This is his self-regulating climax side-hill plow. As he is about applying for a patent, I will forego a description at present; but I confidently assert that it throws other side-hill plows in the shade, and must eventually supersede all yet invented.

I would like to give a glance of what I saw in this region of fine residences, gardens, orchards and fields, but the length of my article forbids. S. H. H.

The Pepper Tree.

We are indebted to Dr. J. G. Cooper for the following account of the "Pepper Tree," so called, which is so common in many parts of this State,—written expressly for our columns:

This beautiful and useful tree is a native of Peru, and has been known to botanists ever since the time of Linnæus, the father of botanical science. He named it *Schinus Molle;* the generic name being adopted from the Greek title of the Mastich tree *(Pistacia lentiscus)*, the specific from the native name of the tree in Peru, viz. "*Mulli.*"

In naming the genus after the Greek tree, Linnæus showed his scientific acuteness, which was always in advance of the knowledge of his time, for the pepper tree is closely allied to the mastich tree, though, according to the *artificial* Linnean system, it belongs to a different order, having ten stamens instead of five.

It is now placed in the same *natural* order, that of Terebinthaceæ, which includes the *Pistachio Terebinthus*, or Venice turpentine tree, and *officinalis*, producing Pistachio nuts, also the Casbew nut tree of India, and the walnut tree of the temperate zone, besides the Sumachs and many more tropical genera. They all agree, among other things, in producing an aromatic resin, of which the balsams of Tolu and Peru, gum elemi, gum mastick, Copal and Japan varnishes, and frankincense, are the most remarkable. The gum resin of the pepper tree is used in Peru for making a dentifice, and, like the leaves, has a powerfully stimulating effect on the throat. The fruit is a red berry, enclosing a large seed, which, when dry, is powdered, as a substitute for black pepper. Though nearly resembling pepper in appearance and taste, the plant producing that spice is not at all related to this, botanically, or in appearance, having more the form of the Calla or Ethiopian lily, and growing only in the tropics.

The Peruvian pepper tree has been carried by the Spanish colonists to most of their settlements in America, and has become apparently naturalized in Mexico. According to Loudon, it has been cultivated in England since 1597, and even there grows in the open air. It possesses one valuable property to our climate, being able to stand one long dry season without maturing, and will be a beautiful ornament to our future hedges.

Local and Original Music.—Mr. A. A. Rosenherg, our enterprising music dealer of No. 139 Kearny street, has published, among others, the following new pieces:

Fair Galop, by F. Zikoff.

La Belle Julier, by A. A. Rosenherg.

All the Rage Polka, by A. A. Rosenberg.

These pieces are highly spoken of, and we are glad to note that Mr. Rosenherg's enterprise in this direction has met with a good degree of success, sufficient, we hope, to continue his original local publications. Such home enterprise is worthy of encouragement by all who appreciate talent and good music.

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W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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San Francisco:

Saturday Morning, Oct. 23, 1869.

Notices to Correspondents.

"Frog Spittle."—O. P., of Guenoc, Lake County, California, a shepherd, sends us sheets of "dried frog spittle," from a dry valley near the head of Putah Creek. This, he says, is "deposited by the female frog with her eggs for the future food of the young tad-poles." Being a very pure, white, natural felt, or paper, he suggests that it might be turned to good account by some of our ingenious mechanics and industrial economists. This substance was described and considered at length in the Mining and Scientific Press three or four years ago, with respect to its adaptation for paper manufacture. It is of vegetable origin, being found in great quantities on the alkali plains of Nevada, where frogs do not exist. Whether moss or other decomposed vegetable matter, it is acted upon by alkaline waters, taken up in the flood season, and deposited in the dry, in flat sheets highly impregnated with soda and other alkalies. It will not answer for anything but the coarsest and poorest quality of wrapping paper.

L. C., Bulliona, Alpine County.—Your communication on the taxation of mining claims will receive attention. Our stock of Mr. Raymond's blanks is exhausted.

Oregon State Fair.—Fifteen thousand people are reported to have been present at one time at the Oregon State Fair, which is just over, at Salem. The entrees of domestic manufactures and machinery were large, but of flowers and fruit double the preceding two, and of articles under the head of "Ladies' Department" equal in number to all other classes put together; from which it may be concluded that ladies are not quite so scarce as they are in the sage brush, and that Oregon is ahead in the matter of homes, schools, growth of towns and villages, and in the laying, broad and promisingly, the foundations of a great State.

Grape Growing as a Business.—Farming in Napa valley has been found less profitable during the two years past than previously. Grape growing is now considered the best paying branch of agriculture in that vicinity, the grapes being bought up to be manufactured into brandy. There are several brandy distilleries within convenient reach, doing a prosperous business. Grapes are worth $25 a ton, and will produce at from five to seven tons per acre. Vineyards five years old can at present be bought in Napa valley for about $300 per acre. Wheat is worth the same amount per ton as grapes, but grows only a fifth of the number of tons per acre.

Metallurgy in Northwestern Mexico.

Mr. Kustel's wet process, introduced by Ottocar Hoffman a year ago at the La Dura and Trinidad mines, Sonora, is working so successfully that many of the neighboring mines which were formerly abandoned are again worked, the ores being brought from them to the La Dura's reduction establishment for treatment. A single modification has been made in the chemistry of the process, arising from the situation of the mines. Sulphuric acid, and manganese, for generation of chlorine gas, were found scarce, or costly, the freight on a single carboy of acid from San Francisco to Guaymas being $6; and the loss and additional cost, by reason of breakage or other damage, in packing them into the mountains being still greater, Mr. Hoffman has found, upon trial, that he can work very successfully without chlorination, or to within 9 per cent. of the same results by the Kiss process alone, as heretofore described in the Mining and Scientific Press. The Kiss process is kin to the Patera process, having been suggested by it, and was first brought into practical use by the Hungarian metallurgist of that name. Patera roasted to chloride, extracted with hyposulphite of soda, and precipitated with sulphide of sodium; Kiss found that lime would answer the same purpose quite as well—extracted with hyposulphite of lime, and precipitated with the sulphide. The cost of working in this manner is insignificant.

Mr. Kustel, to whom the successful application of this process in Mexico is chiefly due, sails to-day for Guaymas, near which place he will superintend like metallurgical operations, that promise favorably.

Wet extraction is no experiment, and is not a "new process," though the modifications practiced by Mr. Kustel are original. Amalgamation, it must be understood, is not practiced, and is not necessary in this case at all. The ore is fahl-ore chiefly, containing only silver.

Cutter-Head for Planers—Patented October 12th, by Jefferson Kindleberger and W. Augustus Arnold, San Francisco. The cutting bits of our wood-planing machines are subjected to a great strain as they perform their work, and it is necessary that their fastenings should be secured with great care, in order to prevent frightful accidents. Messrs. Kindleberger and Arnold, amongst other valuable inventions, have originated what seems to us a perfectly secure manner of arranging the bits in the cutter-head so that they may be permanently fixed when desired, and quickly and easily adjusted when necessary. It consists in making slots through the cylinder opposite to each other and on both sides of the center. The pits or planes are inserted in these slots, and are held in place by a wedge-shaped metal plate, which is operated by a set-screw conveniently located, by turning which, the planes can be either secured firmly in place or freed from their fastenings. We look upon this invention as a decided improvement over the old manner of confining the planing bits.

An event, but a surprise, was the early rain of this week, the first after the long dry season on the coast. Capt. Cunningham, of the steamer Chin du Wan, just arrived from the upper Sacramento, reports that 1,000 tons of grain on the banks of the river, between Knight's Landing and Colusa, were exposed. The same steamers, with the barges, Swallow, Farmer and Union, have returned in order to relieve as far as possible farmers whose property is in danger of being ruined.

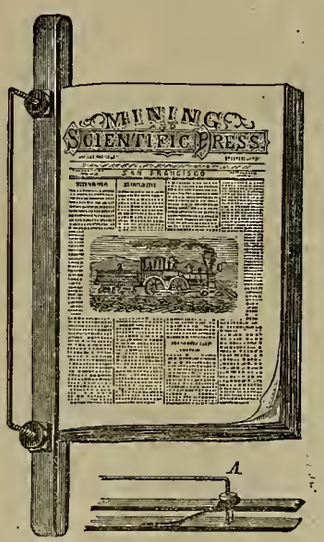
Assistant Librarian.—Mr. George B. Coleman, until recently in charge of the art gallery of the Mechanics' Institute Fair, has been appointed Assistant Librarian in the institution on Post street, vice Stoddard, resigned. Mr. Stoddard goes into the insurance business.

Burgess' Patent Newspaper File-Holder.

In the list of patents issued for the week ending October 12th, is one to Hubert Burgess, for the invention of an improved file-holder for newspapers and folio for sheet music.

Our engraver has made a fine illustration of the newspaper file-holder, given herewith, which is represented as partly filled with sheets. The instrument is light and handy, and holds the paper more firmly in place than other holders, and yet there are none in which the sheets are more readily adjusted.

The construction of the holder is as simple as its operation. It comprises two strips of wood or parallel bars. Through



the uppermost one pass portions of the bent rod. Flat springs are fastened to the lower bar near each end, which raise the upper bar as the nuts on the rod are turned when opening the bars for the reception of papers. Points are set near the front edge in the lower bar, at the right of the screw portion of the bent rod, upon which the sheets are placed and held in regular line until the upper bar is clamped down upon them by the pressure of the nuts, when run down on the threaded portions of the rod. These points may be seen in the fractional view of the holder marked A.

In all file holders before presented to the public, the papers are very liable to tear, or else the method of inserting them requires too much trouble, so that the wants of the public in this line have never before been met with satisfaction.

In Mr. Burgess' device, he provides a perfect holder, which may be quickly adjusted by a child even, and yet it is cheap and simple in construction, and we are compelled to look upon it as one of our best California inventions.

The patent of Mr. Burgess also covers the same device (with some additions and modifications) for forming a music folio. The parallel bars, or clamps, hold the sheet music in the leaves of the cover. A key of four or five inches in length is inserted in a slot cut in the back edges of the clamping bars, crossing the back of the folio, holding it stiffly open, so that it has no tendency to close, but will stand upon the music rack, and keep its place without annoyance to the operator.

This latter device needs an engraving to illustrate it fully. Musicians who have seen it speak in the highest terms of its value, and numbers have proved their faith by ordering samples at extra cost.

Mr. James Stratton, of Oakland, has been assigned one-half interest in this patent, to whom applications may be made for further information. Messrs. James A. Pritchard and J. D. Littlefield, of this city, are also interested in the right for this coast. Although a small article of manufacture, we deem this invention fully worthy of the extended mention we have here given it. This patent was first applied for through Munn & Co., of the *Scientific American*, but was finally secured through the agency of Dewey & Co., of the M. & S. Press. The patentees will explain the reasons for placing the case in our hands to the satisfaction of any Pacific Coast inventor.

Costly Mechanical, Industrial and Scientific Books.

The Mechanics' Institute is living up to the significance of its name by providing for its members all the important new works published in the East and in Europe of a practical nature, bearing upon the peculiar arts and industries of this coast. This is as it should be. Compel every intelligent mechanic, manufacturer, miner or civil engineer, to become a member, because he cannot *afford* to remain otherwise. The library has recently acquired, by purchase, some of the most valuable modern French works on architecture and general art, such as "Revue Générale des Travaux Publics," "Histoire de l'Architecture du Vme au XVIIme, Siècle," "L'Art pour Tous," "Monographie du Palais de Fontainebleau," "Edifices de Rome Moderne," and "Monographic des Halles Centrales de Paris." The plates in these volumes, executed in the finest style, are all working drawings, with plans, sections, scales and elevations.

As everybody in the country is interested more or less in mines and mining, the Mechanics' Institute is doing well in trying to keep up to the times on that subject especially.

Four Centuries Ago.

The Columbus celebration last Sunday, furnished a rather pleasing procession, in which a small three-masted lateen-rigged vessel, called the "Santa Maria," represented Columbus' caraval of that name, and a man in the proper costume represented the hero of just four centuries ago. The Italian militia and citizens at the City Gardens, in the afternoon, transformed that scene of delightful concerts into a temporary Italy—men, maidens, children, songs, and all. Columbus and the Norsemen both crossed the ocean, in what we would call the smallest kind of fishing craft. What could be more suggestive to a student on these coasts than the quadra-centennial celebration of Columbus' fancy, carried out in his little trip.

"Out into the ocean where the sun went down."

Safety Governor.—A new and excellent thing in the shape of an engine governor has been placed on the large engine of Booth & Co. in the Fair, by Wilkie Darling, the agent of the inventor. This is "Robertson's Automatic Safety Stopping Governor." Any of the ordinary governors, on the slipping of a belt, or the sudden stopping of the machinery from any other cause, would fail to shut off the steam instantaneously, and would leave the engine to run at such highly accelerated speed, as would endanger everything in the vicinity. This shuts off steam with great certainty, instantaneously. By means of a compensating weight which rises in proportion to the elevation of the balls, the steam is regulated as is done by other governors. Without attempting more fully to describe Robertson's governor, we refer engineers to the Fair engine, or to the *Bulletin* office, the Fulton Foundry, the Sacramento Iron Works, or the Ophir Works, Virginia City, where the invention itself may be seen in operation.

Sovereigns of England.—A most convenient little wall chart for reference under this title, has been presented to us by Mr. R. Varney, the author, giving the reigns of British sovereigns from Henry VIII. down to Victoria, with the prominent events occurring under each. It should be hung up in every reader and students' room. Francis & Valentine are the publishers.

The Fair will wind up on Saturday next. Next week the charitable institutions of the city will receive their usual series of benefits. Arrangements are being made for the grand closing ball.

Hallidie's Improved Suspension Bridge.

We give to-day diagrams illustrating the improved enspension hridge invented nnd patented by Mr. A. S. Hnllidie, President of the Mechanice' Institute. The bridge in the Pavilion connecting the two gallerics, and which forms a very importnnt feature in the present Exhibition, is constructed nlmost precisely in accordance with the dingrnms herewith given, by Mosers. Hallidie & Co.

Suspension bridgee, as nsually constructed, are sustained by a singlo cahle npon either side of the roadway, cach end of which passes over the top of the towers, nnd thence to the anchorago heyond. In the nnnexed diagrnme, illnstrating Mr. Hallidie'e invention, *two* cnhlee aro shown npon each side, one of which, starting from its anchorage, passes over the top of the nearest tower, and thence to the foot of the opposite one, throngh its hase, nnd following the dotted lines shown in figure 1, to the anchorage heyond. The other is arranged *vice versa*.

Again, in the old bridges, the snspending rods nro all perpendicular from the single cables upon a side, to tbe roadway; wbile in the diagrams herewith shown, the rods nre attached nlternately to the upper nnd lower cahles; while each nlternate rod is connected by diverging truss rods, passing diagonnlly from the lower to the npper cables. The first euspending rod to the right of A, in fig. 1, is attached to the npper cahlo, the next euspending rod to the lower cable, nnd the third to the npper, and so on till the point C is reached, nt which tho euspending rod is attached to both cables. At the lower cnd of each of these enspending rods are secured, by means of adjuetahle nuts or keys, etepe which receive nnd snetain lateral girders. Resting on and secured to the lateral girders nt a point half way between the steps, nre transverse girders, on which the roadway is built in the usual manner. The transverec girdere, being situated half way between the points of support, trnnsmit the load equally to the upper and lower cnhles. The converging or truss rods, already alluded to, connect cnbles A and B together in the manner shown in Fig. 1, nnd in snch a manner as to allow necessary change of deflection of curve from expansion or coutrnction of the cahles, without affecting rigidity of strnctnre or limit of equilibrium of parts.

Various contrivancee have been invented and applied, from time to time, to overcome the flexibility of the cables and roadway of suspeneion bridges, and to negative or prevent that undulating motion so dangeroue to the etability of the etructure and so detrimental to the traffic over it.

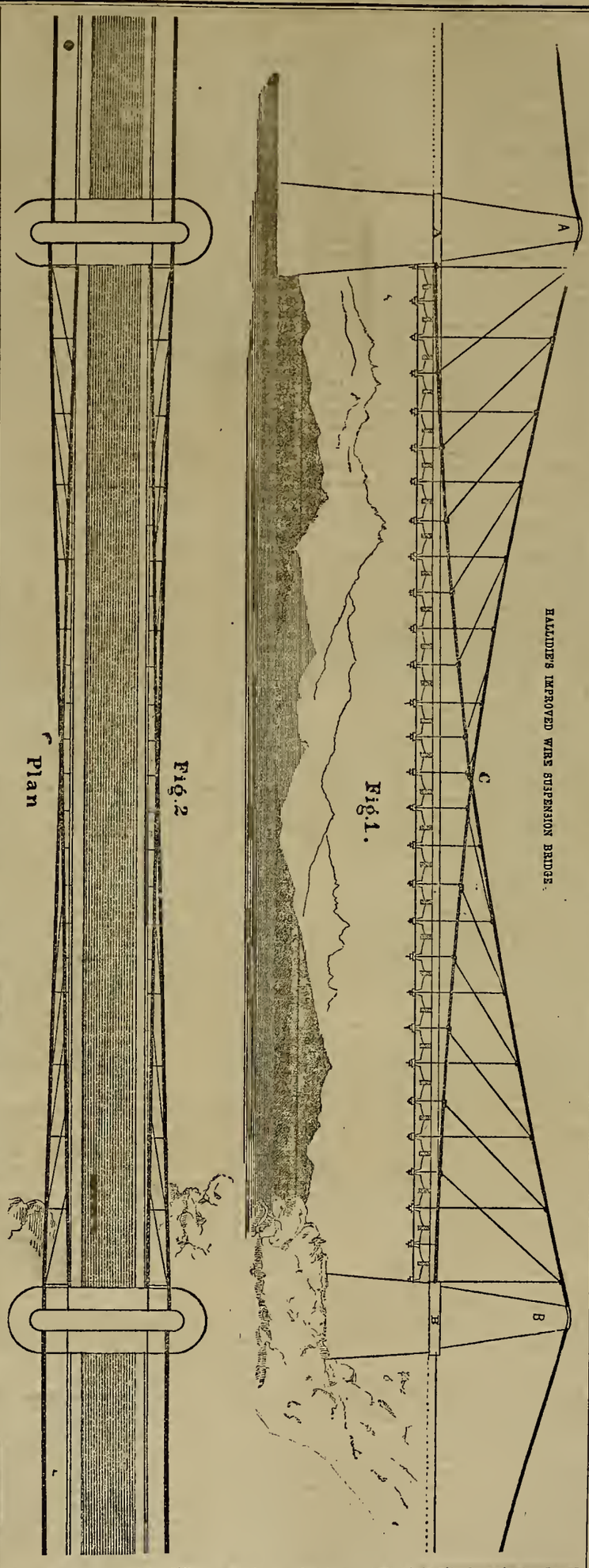
It is by means of these converging rods, in connection with the arrangement of two cables, together with the lateral girders, that the inventor secures n bridge as perfectly rigid as it is possible to make a euspension bridge, nnd a bridge in every way adapted for long spans and railroad travel, combining simplicity of construction with economy of material.

Fig. 2 ehows the plan of hridgo with method of arranging cahles to prevent side oscillation; the cnbles heing more dietant from each other at eummit of tower than nt the hase. and somewhat similar in principle to the plan adopted at the Cincinnati bridge.

Referring to general view of hridgo, it will he seen that a wave passing over the cablee must become negntived on reaching the point of intersection; nnd that the effect of a wave passing any particular suspending rod ie to raise the rod and one end of tho two lateral girders resting thereon to the extent of height of wave—the two transverse girders, on which the roadway ie huilt. being raised to the extent of only one-half the height of wave, thus reducing it to its minimum effect.

This improvement has received the highest commendations from many distinguished engineers, and among others, Mr. Roebling, who erected the Niagara and Cincinnati bridgee, and who, just before his death, planned the greatest engineering work of thie kind, which is to span the East River, between New York and Brooklyn.

A. S. Hallidie & Co. commenced huilding suspension hridges in 1854, since which time they have put up the Folsom bridge, 330 feet span; that at Nevada City, 320 feet; Klamath River bridge, 312 feet; Bear River hridge, 225 feet; Frazer River bridge, 292 feet; besides various smaller structures nt Mormon Island, and other places; also in Oregon and Idaho Territory. They are now engaged in erecting a hridge near Placerville in this State. They have also constructed in different sections, aqneducts for mining and water companies—spanning as high as 420 feet.



Wire Rope.

They are nlso manufacturing large quantities of flat iron rope, which is coming into favor with mining companies. The Ophir Co. at Virginia City, have just ordered two flat wire ropes five inches wide, three-eighths thick, and 1,500 feet long. The demand for wire rope for mining purposes is increasing.

There is also an increasing demand for rope for rigging for ships. Most of the emall craft huilt here adopt iron rigging to n greater or less extent. In snch rigging, made of galvanized wire, one ponnd of iron is equivalent to one nnd three-qnarters pounds of hemp; while the cost of the first ie 14 cents per pound, against 17 for the latter. Another important matter, in connection with the employment of wire rope for shipping, is the fact that the area of enrface which it presents to the wind is as one to two and a quarter, when compared to hemp. Iron rigging does not have to be "set np" (tightened) after variations of weather, as is necessary with hemp. Iron rope may he spliced and fitted in all kinds of weather, quicker, neater and better than that made from hemp. As the expense of rigging n ship forms an important item in its cost, the fact that the eame can he done cheaper with iron than with hemp, ehould be made an important consideration.

At a recent exhibition of the Institnte, Mr. Hallidie exhibited an ingenious mnchine for making wire rope, upon which he had made important improvements. In the present Fair, he exhibits another important invention of his own, in addition to the hridge, which he calls a "grip pnlley," designed for conveying power by means of ropes, wire or hemp. This invention, which eupplies an important want in this direction, was fnlly described in our columns n ehort time since. Application for a patent for this inventon has heen made through the M. & S. Press Patent Agency.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreion Patent Agents, and Publishers of the Mining and Scientific Press.]

For the Week Ending October 12th.

Newspaper File and Music Folio.—Hubert Burgess, Oakland, Cal. Assignor to self and Jamee Stratton.

Gang Plow.—Gustavus A. Davison, San Leandro, Cal.

Steam Engine.—W. H. T. Clark, Snn Francisco.

Cutter-Head for Planers.—Jeffereon Kindleberger and William Augustus Arnold, San Francisco. Assignors to the Inventors' Association of San Francisco.

Blind Wiring Machine.—Jefferson Kindleherger and W. Augustus Arnold, Snn Francisco. Assignors to the Inventors' Associntion of San Francisco.

Earthquake-Proof Chimney.—B. F. Mann, Oakland, Cal.

Key Guard.—Braddock R. Hathaway, Mormon Island, Cal.

Anchor.—George A. Lloyd and Charles A. Stewart, San Francisco.

Machine for Grinding Harvester-Cutters.—John Weichhart, San Francisco.

Heating Apparatus.—John Armstrong, Jr., Sau Francisco.

Rotary Harrow.—Henry A. Gaston, Stockton, Cal.

Combined Seeder and Grain Drill.—Henry A. Gaston, Stockton, Cal.

Spark-Arrester.—Isaac H. Graves, Sacramento City, Cal.

Medicine for Rheumatism.—George Conroy, Mendocino County, Cal., assignor to Robert A. Smith, same place.

In Australia.—It was stated in our last issue that Capt. W. C. Paul, the co-inventor of the Richard & Paul elum and float gold amalgamator, was acting as the London agent, which ie an error. Mr. John A. Ilbury is the agent, and Capt. Paul, who was until recently the snperintendent of the Chontales G. & S. M. Co., presided over by Earl Nelson, is now in Australia, introduc the new system of working into the min ing districts of that country.

Popular, Prosperous and Deserving. The Firemen'e Fund Insurance Company, incorporated some years ago, becnme a popular institution from the start, and hns nlways maintained a credit in San Francisco and throughout the coast, second to no other company. Its business has been managed quietly and judiciously, and we have no hesitation in recommending it unreservedly to persons who desire to take out policies for firo or marine riske. Its officers are: D. G. Staples, President; Henry Dutton, Vice President; and Chas. R. Bond, Secretary. Its business ie conducted in their substantial building corner of California and Sansome streets.

Continental Life Insurance Co., 302 Montgomery street, corner of Pine.

[From the Mechanic' Fair Daily Press, Oct. 16.]

The Fun of the Fair appears to he centered ahont the blowing machine, where the boys of small, as well as those of larger growth, nightly hold hilarious carnival. The machine blows a perfect hnrricane throngh a moveable tnbe about five inchee in diameter, and whatever comes within range of this "invisible power" has got to "get np and git." The fnn consists in watching nnsuspecting parties come within reach of the wind—when off go the hats, bonnets, capes, or whatever is loose. Last night the sport was made extremely rich by a conple who afforded an exhibition which was not entered on the bills. The gentleman was tall, military looking, with whiskers and hair of jetty hne, and curled to the very highest perfection of the tonsorial art. The lady was fair, fat and say twenty-seven, ehort, and wore an enormonsly large blonde chignon, npon which wae a very diminntive hat. When thie couple came within reach of the blast, they were talking and emiling at each, particnlarly gracefnl, when—Presto! in the twinkling of the eye, off went the man's hat, wig and whiskers, leaving his head as bare of hair as a haby's, and—horrors! The little hat of the lady carried off her large chignon, exposing a rather carelessly arranged "brick top" The laugh that followed did not enhside for nearly an honr.

A Simple Washing Machine.—Mr. Lewis exhibits a very simple and apparently a very efficient washing machine, which consists of a common wash tub, having a corngated bottom, with the alternate ridges and depressions radiating from the center, upon which the clothee are placed; a disk, with its nnder side similarly corrugated, is then placed npon the clothes and forced down with a moderate pressnre by means of a lever. The outer end of the lever is then gently pushed back and forth, through an arc of ten or twelve degrees, by means of which a succession of pressures or sqneezes is given to the clothes, which rapidly removes the dirt, without auy pounding or undue wearing. It is in fact, a double rotary wash-hoard, between the faces of which the clothes are pressed rather then rnbbed. It is said to have taken the first premium at every fair at which it has been exhibited. Accompanying this machine, is an improved wringer, which can be readily converted into a mangle for ironing without heat. Agency for the Pacific coast, at 117 Geary street.

Jones and his friend Kane, the well-known dry goods man of Clay street, were going up to Stockton yesterday, and were a little late in starting. Kane becoming impatient lest they ehould lose the boat, wanted to call a hack. Jones implored him not to be in a hnrry—for only think what he would he if he were a hurry Kane. Kane qnieted down at once.

Saved his Bacon.—A young gentleman of this city, named Ham, about to marry Miss Nellie Bacon, of Howard street, took her to Bradley & Rulofson's photographic gallery to have her picture taken—in order to save his Bacon, becanse shc would not be Bacon when she became Ham.

Coffee Grounds.—Florida hoasts of having seven million acres of land adapted for growing coffee. California has consideranle eoffee grounds, but not so much as is generally snpposed, owing to the quantity of chicory used.

A Bluff Game.—The people of Baraboo, Wisconsin, report the discovery of gold in large quantities in some bluffs in that vicinity. We are afraid of "bluffs," in gold mining; we have had too many of them here already.

If Langley puhlishes in his directory the whole of the Owiugs in San Francisco at this time, the list will be longer than that of the Smiths, Joneses, or Robertsons.

What is the difference betwoen a boiled carrot and a San Francisco policeman? The first cau't break a citizen's head withou heing broke—the latter can.

Young Soldiers.—The St. Augnstine College Cadets, from Benicia, visited the Pavilion this afternooo. They numhered ahout 60, wearing handsome gray uniforms.

An Eoglish prize-fighter, named King, has turned preacher. The people say he is a first rate ex-pounder.

Ireland may be famous for making bulls, but it never raised such au ox as is now o1 exhibition at the Fair.

[From the Mechanic' Fair Daily Press, Oct. 18.]

The Excelsior Pump has filled a prominent position in the principal fairs in this State for the last five years, taking many premiums and steadily increasing in favor throughout the coast. It is one of our best California inventions. Captain Cnshing, the proprietor, informe us that his sales last year amonnted to an increase of 50 per cent. over former seasons. They have always been manufactured in first-class style, at the Union Foundry. Their thorongh constrnction, and the liberal dealing of the proprietor, are two good reasons why the pump has heen so successful; sending out an article that will work well nnder all circumstances and last well, has increased the trade. Following up this advantage, the proprietor is now adopting an improved packing, which has lately come into great favor in Europe. It is more costly than packing commonly nsed, bnt the Captain intronduces it into his pnmp without any increase of price to his cnstomers. The Excelsior pump on exhihition in the Pavilion has been purchased by W. C. Ralston, for his fine residence at Belmont.

Billiards Extraordinary. — Messrs. Deery & Little, whose billiard feats will interest and astonish our visitors this evening, are advertised to play again on Wednesday and Friday, afternoon and evening. The genteel billiardists of the Pacific, who will all be present, of conrse, will have a fine opportunity to study position, style and effect, from the gallery, which affords all the enchantment of distance that cau be desired. The Fair Press doffs its forehead out of regard for the professors of force and resistance, and of palpable geometry, at the same time affording unohstructed vision to friends of practical science in the gallery.

Marnen & Myrick.—The coffee and spice works of these gentlemen, at 212 Sacramento street, were recently burned out, but the good name and fame of the goods the proprietors have invariahly furnished our citizens for many years, was too great to allow them to suspend operations, and we hear, almost immediately, that they are going on as usual. Persons who have not patronized them (if there are any such honse keepers in the city) should lose no time in trying their popular brands of coffee.

A Worn of Advice to Young Men.—If you have a sister, take good care of her. If you have not, then get some other fellow's sister to take care of. The taking care of somebody's sister has a very soothing effect on the masculine nervous system.

A Doubting Spirit.—A lady whoee deceased husband had not enjoyed a continuous flow of felicity dnring life, was asked at a seance one night if she would like a communication from his spirit. "I believe not," she said. "If he's got no more spirit in the other world than he's had in this, it's not worth hothering about."

Numbered.—The pictures in the Art Gallery have been numbered from 1 to 361, corresponding with the catalogue published in the Fair Press. This is a good thing; and those who have preserved copies of the catalogue can refer to the title of each picture exhibited.

Why is the Fair Press like a sewing machine? Because it sews, fells, puffs and gathers. It sows broadcast the gems of wit and science, fells empty conceit, puffs deserving merit, and gathers all that is good in the Fair.

Shocking.—Jones fancied he felt the shock of an earthquake yesterday, aud asked his landlady whether she felt it; she said she felt no trnly shock, hut was shocked to hear him talk about shocks.

Two lovers conrted Miss Gruhh. Oue named Garrett was snccessful. The other left the country because he detested a garret, and couldu't live without grub.

W. A. Sublett's Winnow Catch is one of the novel California inventions of merit oo exhibition near the blowing machines. It works to a charm.

Jones says the mud in the streets of San Francisco is like slanders, becanse it dirties the best nnderstandings, and is very hard to rnb off.

Never tnrn a blessing round to see if it has a dar k side to it.

[From the Mechanics' Fair Daily Press, Oct. 19.]

Craig's Dump Wagon.—On a table in the machinery department, and near the *big gate*, may he seeu a working model of an improved dump wagon, the invention of Mr. John Craig, of this city. The construction is such that by allowing the hottom of the wagon to open, the load is at once discharged, and the hottom, which is composed of two parts, may be closed. The two parts of the hottom are hinged to longitudinal rails at such a poiut, that when loaded, they will be supported so as to require very little assistance from the levers, to discharge it. The levers extend up in front of the wagon, and are susceptible of considerahle modification of form for various uses. They are intended to work together, and each operates on a shaft which extends beneath the wagon, and carries arms by which, when the shaft is turned, the bottom pieces are lifted. The inveutor, who is exhibiting the modol, will be pleased to give any further information, either at the Fair, or at his carriage manufactory, 255 Folsom street, where they can he furnished as may he desired by contractors. Patented through the M. & S. Press Agency.

Blake's Steam Pump is nndoubtedly a most excellent pump. The small one in operation in the Pavilion has attracted the general attention of mechanics sioce the opening of the Fair, although but little or no attention is required by it. The agents of the manufacturers, Berry & Place, probahly think it is capable of "going alone." Somebody turns the steam on usually, and the pump starts, and we notice that it continues to run nntil the steam is shut off again. Sometimes a gentleman, wishing to test its capacities, shuts off the steam in part, and it will rnn slower; then it is shut almost entirely off, and it just creeps along. Then if let on again, off it goes at good speed, throwing a good stream; but so long as it has any steam, so long it keeps to work. This, we helieve, is what is called being "positive" in a pump, (i. e., having no dead points, but "passing the center," and starting at *any* point and going *sure* every time), and we shonld judge it to be a valuahle point in a steam pump.

McLeon's Patent Lock.—This improved door lock can be seen on the table near the display of pumps io the Pavilion. The invention is more especially applicahle to spring locks or night latches, and consists in part in so constrncting the tumbler that when moved by the key in one direction it so acts on a secondary bar as to securely stop the bolt, and when moved in the opposite direction it relieves the bolt so that it can be operated by the knob, and will serve as an ordinary latch. It requires personal examination to illustrate its superiority of constrnction and its various merits. It was patented by John McLeod, a young inventor of this city, and was patented through the M. & S. Press Agency, April 13th, 1869.

An Interesting Rehearsal.—The driver of a hearse, returning from a fnneral at Lone Mountain, on Sunday evening, saw a drunken man lying on the road side. To save the man from being run over, he was placed in the hesrse, and carried to the police station. The bad whisky he had drank, caused him to drop into that sleep which knows no waking, and he was rehearsed yesterday. This is rather a grave joke, hut is a very interesting case of rehearsal.

The Last Stocking.—A bachelor at a social party ventnred to say, that every lady present at the party took off her left stocking last before going to hed. The statement created a seosation, and the gentleman was ordered to explain. He said: "which ever stocking a lady takes off *first*, the other is necessary *left*, which must of course he taken off last."

Sich is Life.—Reddy the Blacksmith, who was a "caged lion" while here recently, and was taken back hy the nyrmidons of the law, to account for a little garroting affair in New York, has been tried, *honorably* acquitted, aod is now the favorite candidate for Congress in the Empire City. Such is life iu New York. In jail to-day, in Congress to-morrow.

An Amusing Typographical Error.—One of the recent agricultural fairs offered a premium for the best mode of "irrigation;" but the printer made it "irritation," and the error was not discovered till a farmer in San Joaqnin County demanded the prize by presenting his wife, whom, he said, could irritate any liviog thing.

[From the Mechanics' Fair Daily Press, Oct. 20.]

Flies baked into cake, or stewed, or boiled into soup, are not so rare as to "nonplnsh" even a fastidious eater, nowa-days, but they are not pleasant to meet with as fossils. We can recognize flies as objects that do not belong to seasoning. But there is, besides, mnch nnrecognizable dirt that finds its way into cooking ntensils, milk pans, and the like. Mr. George Renben, of this city, briuge inventive genius to the rescue, in making wire gauze coverings, or lids, which are especially handy for potato hoiling utensils, for milk cans, but are adapted to a wide general use in the kitchen and dairy. When milk cans are left standing, the lid is always lifted off to admit air and prevent spoiling. With Mr. Reuben's gauze, the necessity for an ordinary cover eveu during transportation, is obviated, since milk will not spill through the gauze; and milk having the benefit of air can be made to keep much longer. The cost is inconsiderahle. Samples of Mr. Reuben's patent can be seen in the mechanical department.

Scroll Saw.—Near tho lower end of the machinery department, may be seen a scroll saw, the invention of T. Stebins, of this city. It presents some very nseful novelties, one of which is the use of three straioing springs, which are so arranged that any number of these may be employed as the work is light or heavy and the saws small or large. The guide blocks are so arranged that when very light saws are to be used, they may be clamped in place instead of weakening them by making holes through which to pass pins. By placing the guides at an angle, the rake of the saw at the top and bottom is the same, and the saw may be kept perfectly vertical in its movements, which is of great importance in sawing deep work. The table turns abont centers, which are in a line with the npper surface, eo that a comparatively narrow space serves for the passage of the saw whatever the inclination of the table. The saw is perfectly nnder the control of the operator, and Mr. S. has turned out some remarkable specimens of scroll sawing.

A New Use for the Microscope.—We are informed that a learned *Savan* has discovered a way of telling the honesty of individuals by examining the hair from the top of their heads with a microscope. It was intended to have examined some from the candidates for the Supreme Court, to be voted for to-day; bnt they are all baldheaded, eo the experiment could not be made.

Earthquake Anniversary.—To-morrow, Oct. 21st, is the first anniversary of the great earthquake. We trust it may pass off quietly. Perhaps, however, we ought to beg W. Frank Stewart's pardon for this wish; for he has requested us to "expect—earthquakes—about—this—time."

Tom Thumb had a costly mansion bnilding opposite his Father Warren's house in Middlehorough, Mass., bnt the gale of the 8th instant scattered the bnilding far and wide, and blew the cellar over into the next lot.

Jones says the woman he is looking after to make Mrs. J., must have little waste, great bustle, and good nnderstanding. Ho says the modern style of dress affords excellent opportuuities for marking these traits of the ladies who attend the Fair.

What a Delicious Name!—One of the prettiest girls in a dollar store, on Kearny street, is named Flora Kissagin. It would be a pity to spoil such a name by getting married.

Are you hnogry? Are yon thirsty? Are you hot? Are yon cold? If so, patronize Schiller & Schmidt, in the Fair Restaurant. The fare is good and reasonable.

A Curious Sight to ne Seen on Telegraph Hill.—A bird flying with a dog sitting on its tail. This curions phenomena may be seen at almost any hour of the day.

A Boston chemist advertises thns: "The gentleman who left *his* stomach for analysis will please call and get it, together with the results." Not had for the "Hnb."

A Mr. William Day was recently knighted by Queen Victoria. It will be all night with that Day hereafter.

Why was Pharoah's daughter like a broker? Because she got a little prophet from rushes on the banks.

Spain has over ninety bull rings, There are ahout that number in Wall street also.

[From the Mechanics' Fair Daily Press, Oct. 21.]

A Challenge.

There have been a less number of competitory trials of machinery in the Fair this season than heretofore, for some reason or other. We would like to see a little more pleasant and fair rivalry manifested on the part of exhibitors. If an inventor is running an inferior machine to his neighbor's, the sooner he finds it out the better for himself and all concerned. If he has a better article, the public have an interest in knowing it. We presume it is in this spirit that our well-known friend, John M. Horner, of Mission of San José, sends out through our advertising columns the first public challenge we have noticed this season—broadly inviting all inventors in that line to contest their machines with his "Economy" Washing Machine. The "Economy" has long held an excellent name and perhaps cannot be beat yet, but we should like to see it have another trial now with its new competitors. Mr. Horner is the inventor of a very successful harvester, which cuts, throshes and cleans the grain in the field at one operation. For our next Exhibition we call upon him to bring forward one of his full-size harvesters.

Homeopathy.—The practice of homeopathy has had a wonderful growth in the United States, and is still increasing in favor with cautious people, who do a deal of their own thinking, and are inclined to take care of themselves in good season, when beset with the ills of life to which all flesh is heir. Yet, with the utmost precaution, we are all liable to need a physician some time, and to such as are not already informed of a good reliable practioner in this city, we shall recommend (from personal acquaintance) John H. Floto, M. D. He was reared and educated in Europe, has had 20 years constant practice in Salem, Mass., and now stands second to no homeopathist in this city.

A Little too Familiar.—A good joke is told of a smart Chicago youth who went down to Arkansas on business. While there he went to a party, and at the party danced with one of the settlers' wives. The settler stood it as long as he could, but finally becoming enraged, he went up to the youth and says: "Look here, mister, that is my wife you are dancing with." "Well, what of it?" said he. "Why, this: you dance with her again, you speak to her, you even look at her again, and I'll blow the top of your head off!" "Now, look here," said the juvenile, coolly, "do you see that umbrella setting thar?" "Well, s'pose I do?" "Well, you handle that umbrella, you touch that umbrella, and I'll ram it down your throat, and *I'll spread it!*" This settled the settler.

A Strong Recommendation.—A young woman in one of the rural towns of New Hampshire was desirous of teaching school in a neighboring village, and got this document from the selectman: "This is to certify that Tamar Noyes stands on a medium with other girls of her age and sex, and for what I know is as good as folks in general." Tamar got the school.

An Irishman, with a heavy bundle on his shoulder, riding on the front of a horse car, was asked why he did not set his bundle on the platform. He replied: "Be jabers, the horses have enough to drag me. I'll carry the bundle."

The Eugene City (Oregon) *Journal* expresses its gratification that the "skeleton man" and the "bearded woman" have bought land and are to locate in that city.

Hair is coming down in Paris. It is too high in San Francisco, most of it being worn on the top of the head.

Jones wants to know how it is that wheat continues falling and bread keeps rising in California?

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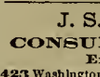
ASSAYER AND WORKER OF ORES,
No. 10 Stevenson street, near First, San Francisco.
Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms.
14v15qr.

Professional Cards.

J. S. PHILLIPS, M. E.,
CONSULTING ENGINEER,
Examiner of Mines, etc.,
423 Washington street.....San Francisco.
(Having had 33 years' experience in Europe and America,) supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
540 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this invaluable Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Horticultural Cocoa and Soluble Chocolate. Sleepy Mills, Brick Lane, London.
3v19-6m

[From the Mechanics' Fair Daily Press, Oct. 22.]

Silver Mining in Washoe's Early Times.

Mark Twain told the Pioneers his mining experiences in Esmeralda, which were exciting, but not lucky: "I finished," he says, "by feeding batteries in a qnartz mill, at $15 a week, and wishing I was a battery myself, and had somebody to feed me. My claims in Esmeralda are there yet. I suppose I could he persuaded to sell. I went to the Humboldt District when it was new. I became largely interested in the Alba Neuva, and other claims with gorgeous names, and was rich again—in prospect, I owned a vast mining property there. I would not have sold out for less than $400,000 at that time. But I will now. Finally I walked home—200 miles—partly for exercise, and partly because stage fare was expensive. Next I entered upon an affluent career in Virginia City, and hy a judicious investment of labor and the capital of friends became the owner of about all the worthless wildcat mines there were in that part of the country. Assessments did the business for me there. There were a hundred and seventeen assessments to one dividend, and the proportion of income to outlay was against me. My financial thermometer went down to 32 Fahrenheit, and the subscriher was frozen ont. I took up extensions on the main lead—extensions that reached to British America in one direction, and to the Isthmus of Panama in the other—and I verily helieve that I would have been a rich man if I had ever found those infernal extensions. But I didn't. I ran tunnels till I tapped the Arctic Ocean, and I sunk shafts till I hroke through the roof of perdition; hut those extensions turned up missing every time. I am willing to sell all that property and throw in the improvements."

The Race of Bachelors are so rapidly hecoming extinct in our society, says the *Social Voices* of the Young People's Social and Literary Society, of this city, that the fact is already alarming to the single young men who remain, for they feel their numbor is being reduced to so few, that they are made all the more conspicuous as they stand out like old landmarks, or the relics of some by-gone age, attracting the notice aud sympathy of the passers-by. We think, too, that it may be suggestive of the lack of moral courage on their hehalf. They dread the tryiug ordeal of first "popping the question," and then "asking papa." For fear that some such dread spectre may hauut these *young* men in their dreams hy night, and their thoughts by day, we give the following anecdote for their encouragement:

When Aytoun was making proposals for his first wife, a daughter of the celebrated Professor Wilson—the lady informed him that it would he necessaryto ask the approval of her sire. "Certainly," said Aytoun: "but I am little diffident in speaking to him on this subject; you must go and tell him my proposals yourself." The lady proceeded to the librrry, and taking her father affectionately hy the hand, mentioned that Professor Aytonn had asked her to become his wife. She added: "shall I accept his offer papa? He says he is too diffident to mention the suhject to you himself." "Then," said old Christopher, "I had better write my reply, and pin it on your back" He did so, and the lady returned to the drawing room. The anxions suitor read tho answer to his message, which was in these words,—"With the author's compliments."

Moral.—Go thou and do likewise.

Our counter show case contains a portable cabinet of 98 specimens of minerals from Europe and various States of the Union; British Letter Patent, with the great seal; one hair hall, five inches in diameter, taken from the stomach of an ox, in Amador County, Cal.; a four-pointed steel drill from the Hoosac Tunnel, Mass., same as used in the pneumatic drilling machines.

Morgan Gale exhibits in the same case, one shoeing hammer, highly finished and of superior design, mado by himself in Mexico, entirely by hand, in a blacksmith shop. Also one tuning fork.

Dr. L. G. Yates, of Centerville, Alameda Co., shows a cahinet of silurian, devonian and carboniferous fossils from New York and Pennsylvania.

Linforth, Kellogg & Rail, who exhibit the Gerrish Submerged Pump in the Pavilion, are doing a very thriving business in general hardware, at No. 5 Front street. They have already established a fine trade with Utah, and are proving an active, growing firm in all branches of their trade.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

Friday Evening, October 23, 1869.

Miscellaneous Stocks.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	90	—
Legal Tender Notes	75½	76¼
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & Int.	
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1850	100	—
San Francisco School Bonds, 10s, 1861	par & Int.	
San Francisco City and Co. Sch'l B'ds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	76	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	47½	50
State Telegraph Co	25	—
Spring Valley Water Co	—	63
Gas Companies.		
San Francisco Gas Co	84	85
Sacramento Gas Co	52	54
Railroads.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	69
Central Railroad	56	—
North Beach and Mission Railroad	67	68
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
Insurance Companies.		
Firemans' Fund Insurance Co	96	100
Pacific Insurance Co	107	116
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	96	100
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	90
People's Insurance Company	90	95
Banking Institutions.		
Pacific Bank	97½	100
The Bank of California	145	—
Mining Stocks—Washoe District.		
Alpha	14	14¼
Baltimore American	—	—
Belcher	—	11
Bullion, C. H	—	15
Crown Point	10¾	11
Gole (Va.)	—	—
Confidence	—	20
Consolidated Virginia	—	—
Chollar-Potosi	15½	16
Ganger	—	—
Exchequer	6	8¼
Empire Mill and Mining Co	18	20
Gould & Curry	70	71
Gold Hill Quartz	25	—
Hale & Norcross	135	138
Imperial	36	37
Julia	—	—
Justice and Independent	1	1¼
Kentuck	130	135
Lady Bryan	—	10
American	—	—
Occidental	11	12
Ophir	13¾	14
Overman	110	112
Segregated Belcher	5¾	6
Savage	45¾	46
Sierra Nevada	14½	15
Union	—	—
United States	—	—
Yellow Jacket	37	37¼
Miscellaneous Mining Stocks.		
Amador (California)	278	280
Aurora, White Pine	8	—
Eureka, (California)	220	225
Golden Charlot (Idaho)	20	22
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocoillio, White Pine	½	—

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Friday, October 22, 1869.

Iron.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1¾c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2¾c ₱ lb.

Scotch and English Pig Iron ₱ ton	$32 50	@ — —
White Pig ₱ ton	30 00	@ 32 00
Refined Bar, bad assortment, ₱ lb	— 03	@ — —
Refined Bar, good assortment, ₱ lb	— 04	@ — —
Boiler, No. 1 to 4	— 04¾	@ — —
Plate, No. 5 to 9	— —	@ — 04¼
Sheet, No. 10 to 13	— 04¾	@ — 5
Sheet, No. 14 to 24	— 05	@ — 5¼
Sheet, No. 24 to 27	— 05	@ — 6¾
Copper.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb		
Sheathing, ₱ lb	— —	@ — 26
Sheathing, Yellow	— 20	@ — 21
Sheathing, Old Yellow	— 10	@ — 11
Composition Nails	— 21	@ — 22
Composition Bolts	— 21	@ — 22
Tin Plates.—Duty: 25 ₱ cent. ad valorem.		
Plates, Charcoal, IX, ₱ box	12 00	@ — —
Plates, I C Charcoal	10 00	@ 10 50
Roofing Plates	10 00	@ 10 50
Banca Tin, Slabs, ₱ lb	— 40	@ — 42½
Steel.—English Cast Steel, ₱ lb	— —	@ — 15
Quicksilver, ₱ lb	— 55	@ — 60
Lead.—Pig, ₱ lb	— 7½	@ — 8
Sheet	— 10	@ — —
Pipe	— 11	@ — —
Bar	— 9	@ — 9
Zinc.—Sheets, ₱ lb	— 10½	@ — 11
Borax.—California, ₱ lb	— 38	@ — 40

San Francisco Prices of Copper Ores.

San Francisco, Oct. 22, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

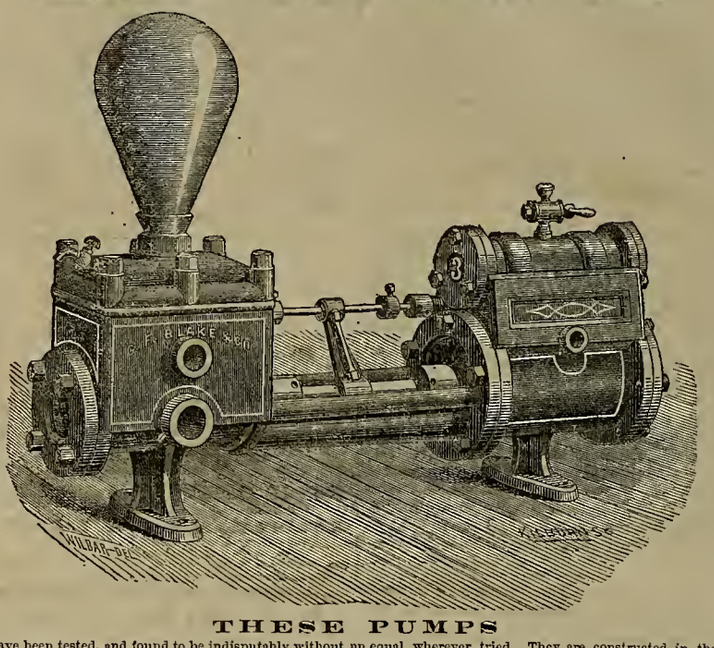
	Per ton.		Per ton
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	35 20	30 " "	75 60
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

These prices, corrected by W. T. Atwood, we helieve will be found substantially correct, and can be realized at this date.

No Objection to Greenbacks.—A thief walked into a money changer's office on Montgomery street yesterday, and under the pretext of purchasing an old 50 cent coin, managed to purloin nearly $200 worth of greenhacks, with which he escaped. That fellow don't mind taking greenbacks.

BLAKE'S PATENT STEAM PUMP.



THESE PUMPS

Have been tested, and found to be indisputably without an equal wherever tried. They are constructed in the most simple style, and built in the most thorough manner—specially calculated for SIMPLICITY, DURABILITY and POWER.

Some of the advantages of the Blake Pump may be summed up as follows:

It is positive under any pressure. *May be run as slow or fast as may be desired.* Will discharge more water than any others of the same dimensions. Has no leaky joints, the steam part being cast in one entire piece. The steam valve is perfectly balanced, is cushioned at each end, and slides with the greatest facility. Will start at any point of the stroke, and will discharge all the water of condensation.

The Pump has no crank or fly-wheel, thereby saving a considerable item of expense to the purchaser. Having no dead points, it therefore needs no watching, and is consequently ready to start without using a starting bar or any hand work whatever.

The Blake Pump is extensively used

On Railroads and Steamboats; in Hotels; for Mining and Fire Purposes;

IN BREWERIES, TANNERIES, SUGAR HOUSES, FACTORIES, MILLS, LAUNDRIES,

And as Boiler Feeders, wherever steam is employed. In fact, wherever water or other liquids are desired to be raised in large or small quantities, or against heavy or light pressure, it is the

Cheapest and Best Pump that Can be Used.

It is offered to the public as the most perfect independent Steam Pump ever invented. Twelve different sizes are made, capable of throwing from 1,000 to 180,000 gallons an hour, and adapted to any class of work that might be required. For sale by

BERRY & PLACE,
112 and 114 California Street, San Francisco.

☞ Every pump will he warranted to perform the work required of it by the purchaser, or it may be returned and the money will be cheerfully refunded. 17v19

GOLD METAL, OR COLLINS' METAL WATCHES.

IMPROVED OROIDES.

Great Reduction! Prices in Greenbacks!!

We have made great improvements in our Watches lately, and will hereafter sead only our BEST QUALITY, with Bill of Collection in Greenbacks.

BEAUTIFUL WATCHES for Ladies..... $15 and 20
" " " for Gen lemen..... 15 and 20
LEONTAIN CHAINS for Ladies' Watches..... $6
LONG NECK CHAINS for Ladies' Watches..... $6
GENTS' VEST CHAINS..... $3 to $6

The firm of C. E. COLLINS & CO., so long and favorably known in San Francisco, will be closed after September 15, 1869, and will continue in our

NEW COLLINS WATCH FACTORY,
No. 335 BROADWAY,
Corner of Worth Street, NEW YORK CITY.

☞ When SIX Watches of the above are ordered at one time, we will send one Watch Free, making seven Watches for the price of six.

We deal largely in WATCHMAKERS' TOOLS AND MATERIALS, as usual.

Avoid persons who propose to sell the GOLD METAL or COLLINS' METAL WATCHES, as the GENUINE can only be got of us, and no one is authorized to use our name in any way.

Address, **C. E. COLLINS & CO.,**
13v19-3m **No. 335 Broadway, Corner of Worth Street, New York City.**

SPECIAL NOTICE.

TO DEALERS AND CONSUMERS

—OF THE—

H & L

AXLE GREASE.

Having received your liberal patronage and support during the last fifteen years, and desiring to further extend its consumption, and if possible meet the market of our Chicago friends, we have made a great reduction in prices, and from our long experience we will satisfy you that there is none BETTER, and through your liberal patronage that there is none CHEAPER.

HUCKS & LAMBERT,
144 Natoma Street.

Depot, 320 Jackson Street.

N. B.—We are prepared to furnish Bulk Packages to contractors on equally liberal terms.

HIBBERD, SANBORN & CO.,

STAIR BUILDERS.

South Point Mills, Berry Street,

Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.

ENGRAVING ON WOOD DESIGNING AND ENGRAVING on wood and for electrotype cuts of every description, done by superior artists at the office of the Mining and Scientific Press. Fine Cuts made for Book and Newspaper Illustrations, and for Fancy Labels for printing in various colors; Monograms, Seals, etc., etc. Prompt execution and reasonable prices.

DEWEY & CO.,
No. 414 Clay street, S. F.

Hints to Inventors.

The assignee of every invention may have the patent issue to him directly, when he is the purchaser of the entire interest.

A patent may issue in the joint names of the inventor and assignee, the inventor himself being one of the assignees.

The application must be made by the actual inventor, if alive; but if the inventor be dead, it may be made by his heirs or executors.

A working model is always desirable to enable the office to determine its precise operation. The name of the inventor and also of the assignee, if assigned, must be fixed upon it in a permanent manner.

What is really embraced in the original invention, and so described or shown that it might have been embraced in the original patent, may be the subject of a reissue.

The mere fact of prior invention abroad will not prevent the granting of a patent, unless the invention had been described in some printed publication.

When the patent is applied for in the United States, after being obtained abroad, it will extend only fourteen years from the date of the foreign patent.

Every assignment should be recorded in the Patent Office within three months from its date.

All old materials and old principles are used in a state of combination to produce a new result, the inventor may obtain a valid patent for such result.

When an application has been rejected, the inventor may manufacture his invention for two years, with the privilege of renewing his application within that time, if he so desires.

The inventor or inventors must sign the petition and claims, the latter to be attested by two witnesses, also take the required oath before some authorized person.

A partner, who is not an inventor, cannot sign a joint application without committing perjury.

If the inventor fails to pay his last Government Fee within the time prescribed after the patent is allowed (six months), he may, at any time within two years, renew his application by paying the first fee again, and thus finally obtain his patent.

Models may be withdrawn from the Patent Office by inventors when their cases are rejected.

The actual manufacture, sale, or use of an *article* may infringe—but the sale or purchase of *patent rights* is not infringement.

A patent right is personal property, and is assignable, but cannot be seized and sold on execution.

Small agents swarm about the Patent Office block at Washington, ready to receive the unwary applicant, who determines to go to Washington to prosecute his own claims. Ingeniously-worded and cunningly devised circulars, are showered upon every patentee when his claims are first published, and inventors are led to believe that in future their patents can be secured at very low rates. We have never heard of an inventor, here or in Washington, employing any of these promising letter-senders at anything less than exorbitant prices in the end, for services performed. A majority of the substantial offices in Washington are branch agencies of houses in other cities.

The published rules of the Patent Office say: "The Patent Office cannot respond to inquiries as to the novelty of an alleged invention, in advance of an application for a patent, nor to inquiries founded upon brief and imperfect descriptions propounded with a view of ascertaining whether such alleged improvements have been patented, and if so, to whom; nor can it act as an expounder of the patent law, nor as counselor for individuals." Such information should be sought through intelligent and reliable agents.

Saving of Time.

In urgent cases for an immediate patent, persons can deposit the amount of the last fees with us, in San Francisco, and have our Washington agent procure the *issue* of the papers as soon as granted, saving at least several weeks time which would otherwise be required for the inventor to receive notice and then forward the money. Money advanced for this purpose will be returned, should the application be rejected. By adopting this course, we are enabled, *with our other advantages*, to secure the *receipt* of patent papers to inventors on this Coast, several months sooner than can generally be done through agents in the East,—without the applicant going to the risk and expense of sending on the last fee before it is known whether the patent will be granted.

DEWEY & CO.,
Publishers Mining and Scientific Press, U. S. and Foreign Patent Agents, 514 Clay street.

RETURNED.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Use Pain Killer for Cholera and Bowel Complaints, for Boil, Cuts, Bruises and Scalds, Old Sores, Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat,**
Sneddn Colds,
Coughs, Etc.
Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to imitate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

A Family Medicine.—The PAIN KILLER is a purely vegetable compound, and while it is a most efficient remedy and pain, it is a perfectly safe medicine, even in the most unskillful hands. For Summer Complaints, or any other form of bowel disease in children or adults, it is an almost certain cure, and has, without doubt, been more successful in curing the various kinds of Cholera than any other known remedy, or the most skillful physician. In India, Africa and China, where this dreadful disease is more or less prevalent, the Pain Killer is considered by the natives, as well as European residents in those climates, a *sure cure*.

We have long known the high character of the PAIN KILLER, and that it is used with great success and satisfaction in our best families. It is the favorite medicine of our missionaries in heathen lands, where they use it more than all else together for the diseases that abound in those warm climates. It should be kept in every house, in readiness for sudden attacks of sickness.—*Chr. Press.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

KENDRICK & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents

New Mining Advertisements.

Siempre Viva Silver Mining Company, District of Zarugoza, Sinaloa, Mexico.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the seventeenth day of September, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
R Rayerque	10	25	$37 50
J S Bacon	131	25	37 50
G Mahe	157	10	25 00
G Mahe	211	4	10 00
— Oesterlinck	164	20	30 00

And in accordance with law, and an order of the Board of Trustees, made on the seventeenth day of September, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction by J. Middleton & Son, at their salesroom, 310 Montgomery street, San Francisco, on Monday, the eighth day of November, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN F. LOUISE, Secretary.
Office, 314 California street, Up stairs, San Francisco, California oc23

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixth day of September, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Mrs B Bell	8	60	$30 00
E G Bidleman	109	50	25 00
E G Bidleman	110	50	25 00
E G Bidleman	116	20	10 00
E G Bidleman	117	20	10 00
E G Bidleman	119	20	10 00
E G Bidleman	127	10	5 00
E G Bidleman	128	8	4 00
E G Bidleman	135	100	50 00
E G Bidleman	136	100	50 00
E G Bidleman	139	100	50 00
E G Bidleman	140	20	10 00
E G Bidleman	141	27	13 50
E G Bidleman, Trustee	79	100	50 00
E G Bidleman, Trustee	81	50	25 00
P W Dillon	32	50	25 00
P W Dillon	33	50	25 00
P W Dillon	34	50	25 00
Wm Farrell	131	10	5 00
Jessie E Greene	1	15	7 50
Jessie E Greene	2	15	7 50
Michael Herlhey, Unissued		5	2 50
John Hamill	66	15	7 50
John Hamill	67	15	7 50
John Hamill	106	15	7 50
Peter McKewen	24	30	15 00
John McKewen	25	150	75 00
Miss Mary McMahon	29	15	7 50
John Murphy	62	150	75 00
John Murphy	121	30	15 00
Wm Neagle	61	393	196 50
Wm Neagle	83	5	2 50
Thos Newcomb, Trustee	47	100	50 00
Miss Mary J Neagle	85	30	15 00
Chas Oekel	Unissued	5	2 50
B F Page	19	15	7 50
B F Page	124	10	5 00
D Richards	146	20	10 00
D Richards	150	50	25 00
Harvey Strong	20	15	7 50
F Stohr	37	10	5 00
F Stohr	38	5	2 50
Michael Shell	Unissued	10	5 00
Bartholomew Wool	36	30	15 00
B Wager	126	25	12 50

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of September, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, on Monday, the eighth day of November, 1869, at the hour of 11 o'clock A.M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. B. WINGARO, Secretary.
Office, 408 California street, San Francisco. oc23

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment (No. 2) levied on the twenty-fifth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. shares.	Amount.
Bishop, T B	unissued	1000	$200 00
Coy, Frank	unissued	1000	200 00
Creighton, F	2 to 11 inc-ea	100	200 00
Gibb, W T	Unissued	1000	200 00
Gibb, W T	unissued	1000	200 00

And in accordance with law, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salerooms of John Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, Cal. on Monday, the twenty-fifth day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

SAM'L S. MURFEY, Secretary.
Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. oc9

POSTPONEMENT.—The above sale is hereby postponed until Monday, the twenty-second day of November, 1869, at the same hour and place. By order of the Board of Trustees.
oc23 SAM'L S. MURFEY, Secretary.

La Blanca Gold and Silver Mining Company.— Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

Notice is hereby given, that the Annual Meeting of Stockholders of the above named Company, will be held on Saturday, the 30th day of October, 1869, at 2 o'clock P. M. at the office of the Company, No. 312 Front street, San Francisco, for the election of Trustees for the ensuing year, and such other business as may properly come before the meeting. By order of the President.

oc23 JOSEPH G OLOMAN, Secretary.

Mining Notices—Continued.

Alleghany Consolidated Gold Mining Company, Sierra County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-fourth day of September, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the twenty-fifth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the fifteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. sep25

Bocklin Silver Mining Company,—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of September, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 40 Merchants' Exchange, California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixth day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the twenty-sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. D'ELL STONE, Secretary.
Office, No. 40 Merchants' Exchange, California street, San Francisco. oct2

Glenwood (Mill and Mining Company.—Location of Works: Greenwood, El Dorado County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of October, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the fifteenth (15th) day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the seventh (7th) day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco, Cal. oc15

North America Consolidated Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of September, 1869, an assessment of two and one-half cents (2½c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN ARMSTRONG, Jr., Secretary.
Office, 302 Montgomery street, San Francisco. oct2

U. S. Grant Mining Company.—Location of Works: Carlisle, Nevada County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-first day of September, 1869, an assessment of fifty cents (50c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-sixth day of October, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the thirteenth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.
Office, No. 226 Clay street, San Francisco. oc2

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10 bal	2 92
George S Porter	24	5 bal	1 46
George S Porter	29	5 bal	1 46
George S Porter	3	268 bal	78 32
George S Porter	4	200 bal	58 45
George S Porter	6	200 bal	58 45
George S Porter	5	200 bal	58 44
George S Porter	8	200 bal	58 45
George S Porter	9	200 bal	58 45
S P Wells	27	10 bal	1 01
S P Wells	29	10 bal	1 02
S P Wells	30	10 bal	1 02
S P Wells	10	1248 bal	127 75
J H H Williams	69	979 bal	92 21
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10 bal	1 00
W H Kelin	43	5	1 50
Otis V Sawyer	45	20	6 00
Otis V Sawyer	46	20	6 00
R G B McDonough	48	100 bal	10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	69	880 bal	63 00
J O Littlefield	61	630 bal	63 00
George H Russell	64	600 bal	133 12
S M Smith	74	200 bal	20 00
Samuel D Meyer	75	50	15 00
George B Merrill, Trustee	68	631	189 30
Otis V Sawyer	71	1200 bal	112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. RUSSELL, Secretary.
Office, No. 439 California street, San Francisco. se25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.
oc9 GEO. H. RUSSELL, Secretary.

WALTHAM WATCHES.

Let every one who wants a Watch, read this carefully.

Especially if in some remote out-of-the-way place.

Now that the railroad is open, we propose to give the residents of CALIFORNIA the opportunity of getting single genuine Waltham Watches at the

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We sell more Waltham Watches than any other establishment in the country, either wholesale or retail; we send great numbers to every section of the country by Mail and Express, carefully packed, and in perfect running order. Our plan is this: You want a Watch, and see our advertisement; now, we want you first to write to us for our Descriptive and Illustrated Price List; we will send it, postpaid, by return mail. It explains all the different kinds, tells the weight and quality of the cases, with prices of each; you then make a selection of the kind you prefer, and send us your order. We will then send you the Watch by Express, with the bill to collect on delivery. We give instructions to the Express Company to allow you to open the package and examine the Watch; if it suits, you can pay, and take it; if not, you are under no obligation to receive it: and if it is taken, and afterwards does not prove satisfactory, we will exchange it, or

REFUND THE MONEY.

As an indication of the Prices, we will quote one Watch from our list, The P. S. BARTLETT, *Lever Movement, with Extra Jewels, Chronometer Balance, Patent Pinion, Patent Dust Cap, and all the other late improvements, in a Solid Coin Silver Case,*

$28 in Greenbacks, or about $20 in Coin;

All the other kinds, both gold and silver, in the same proportion. Do not order a Watch till you have sent for a Price List, as it contains a great deal of information regarding these Watches that will enable you to make an intelligent selection. Don't forget, when you write, to state that you saw this advertisement in the MINING AND SCIENTIFIC PRESS, and you need not put in stamps for return postage. Address in full,

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W. S. HOBART, Esq., Virginia City, Nevada.

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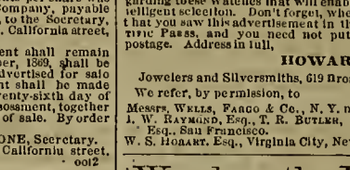

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Pulleys,	Quicksilver,
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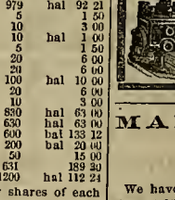

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Publishers Mining and Scientific Press, 414 Clay st

MAYFIELD, Cal., June 26, 1869.

DEWEY & CO., *Patent Solicitors, San Francisco*—Gentlemen:—In acknowledging the receipt of my Letters Patent, allow me to express my thanks for the skillful and trustworthy manner in which you have conducted my business before the Department at Washington. I am perfectly satisfied with the high degree of ability and integrity displayed in the management of my case, and I know of no similar agency in which I could place corresponding trust. Yours truly, J. M. JOHNSON.

At the Minnesota State Fair, last year, a man appeared with a big squash, which he had brought 170 miles on an ox-cart, walking every step of the way. Of course such an extraordinary instance of devotion to the science of squash raising procured the husbandman a notice in the papers, This year there appeared not one, but seven ox-carts, all with squashes in them, all brought from a distance of over 150 miles, the respective owners all declared that they had walked every step of their respective journeys, and these were righteously treated by the press with the most awful silence.

All History is Unreliable.—A story is current and may be true, but by and by all the papers get hold of it and it becomes *their* story. Then some authoress works it up into a romance, and it becomes *her* story. Then some masculine writer reviews the lady's book, and it becomes *his* story—history—and cannot be depended upon for its truth.

A Wonderful Will.—The late Rufus Dwinel, of Bangor, Me., left $2,000 to the Editors of the Bangor *Whig*, as a mark of his appreciation of the services of the press. Such a bequest is without precedent, and will probably never be imitated.

Wheelbarrows have come down to us through six centuries, and have hardly experienced an improvement since the first invention.

The lawyer would be better off, his conscience far less pliant, who owned a little farm in fee, and made that farm his client.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT.

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BOILERS, HIGH AND LOW PRESSURE,

Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Patton's, and Belding's Amalgamating Pans and Settlers; Hendy's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white Iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Hendy, Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.

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As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Off at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:

"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 30-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 50 or 60 horse power with ease and economy. Awarded silver medal. Wm. Burnett, Monty Fletcher, John Myers."

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AMALGAMATOR AND SEPARATOR,

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Castings of every description, Iron and Brass.

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GENERAL DEPOT:

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This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness with the advice of a physician, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be so digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the physician only can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the Indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

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The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apirture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

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STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

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Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

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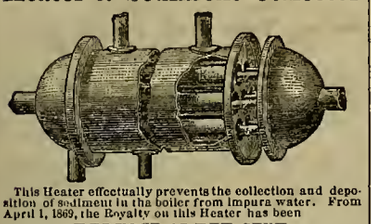

This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

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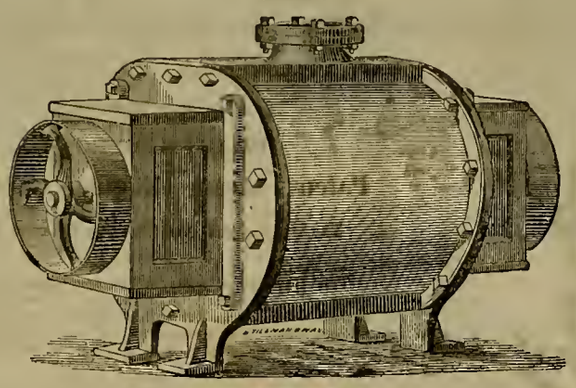

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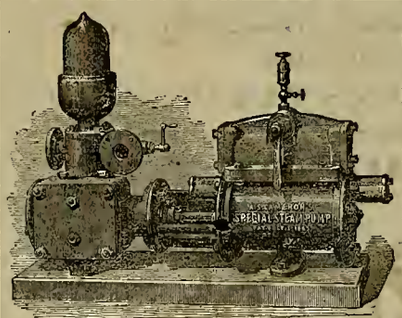

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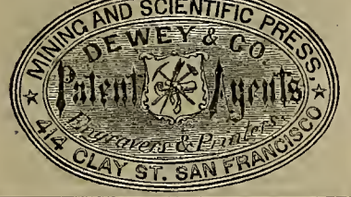

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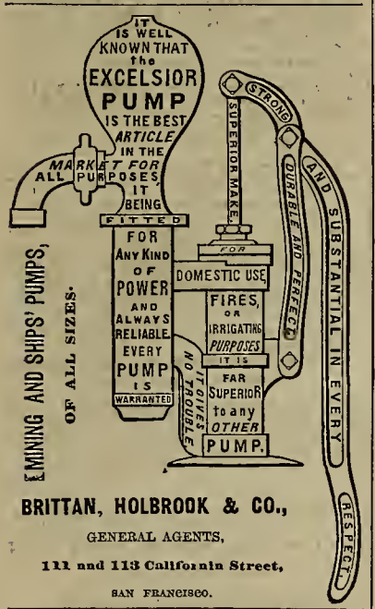
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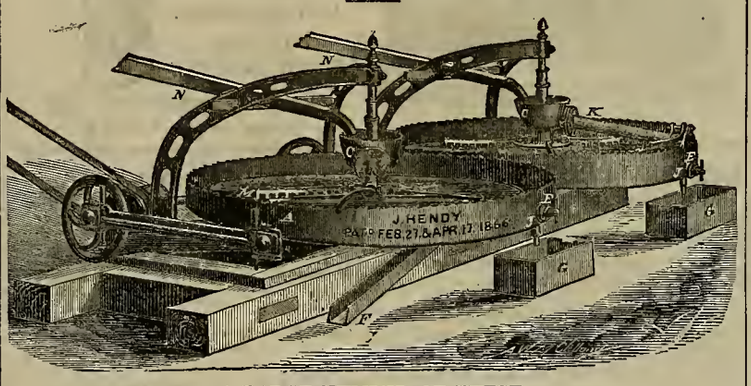

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J. HENDY, Patentee.

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13v17tf

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CRUCIBLES, and other fire-standing Goods,

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THE MOROAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; change of temperature has no effect on them; stand on the average forty to fifty pourings.

CERTIFICATES:

United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,

Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every not obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs A. S Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,

A. S. HALLIDIE & CO.,

18v18-9p 519 Front street, San Francisco

To the miner, farmer and mechanic—the three great interests that form the base and ground-work of all our prosperity—this paper should be considered as almost indispensable. We wish the Press boundless success in the future.—*Placer Herald*

MINING AND SCIENTIFIC PRESS.

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, OCTOBER 30, 1869. VOLUME XIX. Number 18.

New Patents.

SNOW PLOW AND EXCAVATOR.—Anstin H. Jackson, Bear Valley, Nevada County, Cal. This invention consists of a car mounted upon wheels so as to be moved along upon the rails in front of the locomotive. In the front portion of the car is placed a wheel of a peculiar pattern, which, as the car is moved forward against a snow bank, draws in the snow and delivers it into a chamber in the middle of the car, in which a similar wheel is revolving in a direction transverse to the revolution of the front wheel. This latter wheel gathers the snow delivered to it by the front wheel, and by the force of its revolution hurls it through an opening in the side of the car to a distance from the track. The inventor proposes to build one of these plows and place it upon the U. P. R. R. this winter to test its value. He is now in Chicago, where he intends to consruct the plow.

PORCELAIN VARNISH FOR PLASTERED WALLS.—William M. Kimber, Sacramento, Cal. No finish can be better or neater than a finely-plastered or hard-finished wall; that is, if it could retain its original whiteness and cleanliness, but it soon becomes spotted and dirty, and the whitewash brush must be used, which remedies the dirt, but in most cases destroys the fine finish of the wall. The preparation above mentioned is intended to be applied in a manner similar to a coat of whitewash immediately after the wall is finished. This varnish soon becomes perfectly hard, and does not in the least affect the finest finished wall, but prepares it so that it can be washed with soap and water when it becomes dirty.

GATE LATCH.—Daniel Sheets, Suisun, Cal. This invention relates to a gate latch of cheap construction and great simplicity. The inventor has here combined a gate latch with a lock or bolt, by which the latch can be locked when desired.

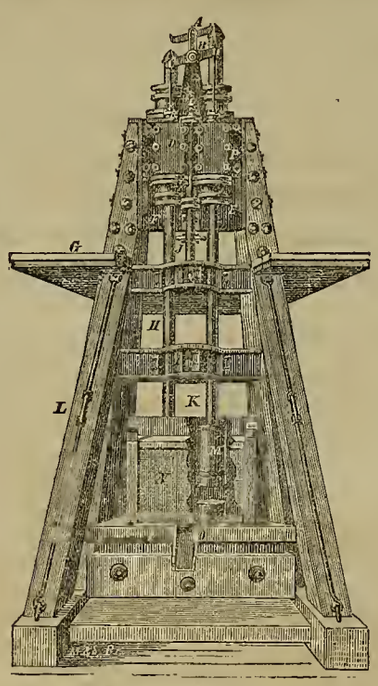
Experiments with Gun Cotton.

The favorable reports upon the use of gun cotton from abroad have led to a number of experiments in the Eureka mine, Grass Valley, a small supply having been procured from England for that purpose. The cartridges used were about an inch in diameter, and in length according to depth of hole, and were exploded by concussion, a cap being employed similar to that used in exploding giant powder. Gun cotton will not bear any heavy tamping, on account of danger of explosion. It would accordingly tear out the top of the holes, but its effect seldom extended to the bottom or laterally. In slanting or overhead shots, on account of the difficulty of retaining the sand tamping in the holes, it was found to be of little use. Further experiments are to be made. In an open quarry it is thought that it would answer.

VIRGINIA'S RAILROAD.—Twelve miles of track have been laid on the Virginia and Truckee Railroad. All the iron is on the ground, and by the middle of November the whole of the main road will be completed. Mr. Yerington, the Superintendent, has been laying from a mile to a mile and a half of track a day.

Taylor's Improved Steam Stamp Mill.

We give, herewith, a perspective view of Taylor's Improved Stamp Mill, now on exhibition at the Mechanics' Pavilion. This mill, as will readily be perceived, is designed for crushing quartz by the application of steam direct to the stamps. Many attempts have already been made to accomplish this object by devices variously contrived, all of which have met with a greater or less degree of success; but none have so far succeeded as to reach any extended use. In the machine herewith presented much effort and ingenuity has been expended by Mr. Taylor in avoiding the mistakes and imperfections which have been observed in previously constructed mills of this kind.



TAYLOR'S IMPROVED STEAM STAMP MILL.

This machine consists of two stamps driven by the direct application of steam to the stems, which form the piston rods of two small steam cylinders placed at the top of the battery frame. The principal improvements claimed consist:

First.—In the simple and effective valve gear, which consists of a T-shaped cam, surmounting a horizontal shaft which is attached to the valve rods by a small beam. This cam is moved by the last 2½ inches of the up-stroke of each stamp. By this arrangement the up-stroke is met by a full open port of steam, when the piston is within one inch of the cylinder head, reversing the motion and giving the full force of the steam to the down stroke, and at the same instant opening the lower induction port of the opposite cylinder, which raises the stamps connected with that cylinder, and reverses the valves; thus securing a counter-balance of pressure on the cylinders, they being both cast in one piece.

Second.—In an arrangement by which the cylinders can be raised or lowered so as to give any desired length of stroke; and to compensate for the wear of shoes and dies. This arrangement consists of casting upon the outer side of each cylinder, flanges, forming a V-shaped groove, which run on slides cast on the plate connecting the battery posts, to which the cylinders are secured by four bolts. These bolts being loosened, the cylinders may be readily raised or lowered by a screw and hand wheel.

Third.—In order to make the above arrangement practicable, expansion steam joints have been applied to the induction and exhaust pipes.

Fourth.—The placing of the lower induction ports one-half an inch above the lower cylinder head, thus avoiding the danger of breaking out the cylinder head by the wearing down of the stamp; as the piston would cut off the steam at this point.

Fifth.—The introduction of an improved stamp guide, which appears to be just the thing that is needed for such work. This improvement is worthy of most special notice. It can be readily applied to any mill in use—is extremely simple, easily adjustable, and almost indestructible in its main parts. The iron of the stamp is made to run against blocks of wood or metal, which are adjusted to the wear by set-screws; and which, when worn out, can be readily replaced.

Referring to the engraving, G is a platform for the convenience of the engineer, in attending to the operating portions of the mill. A is the T-shaped cam which operates the valves; the cylinders are shown at D. P is the flange, attached to the cylinders, in which the V-groove is made which slides on the V-slide marked E. The plate F is bolted firmly to the head of the battery posts. J shows the hand wheel, by which the cylinders and their operative connections are moved up or down, as required. The feeding platform is placed just below K, and in the rear of the mill; M shows one of the stamps raised above the die; D shows the trough by which the pulp is led away from the battery. The entire structure is substantially braced, bolted and tied. The right hand stamp is represented just ready to fall, the upper induction port of the right cylinder having been just thrown open by the elevation of one arm of the T-shaped cam, while the depression of the opposite arm has opened the lower induction port of the opposite cylinder. This battery is constructed to discharge both in front and rear.

The cost of a mill of two stamps, like the one on exhibition, which, it is claimed, will do as much work as an ordinary mill of 15 stamps, will be about one-third that of the latter, with its driving machinery. Moreover, as the amount of machinery to do the work is reduced to one-fourth of that ordinarily required, the wear and tear must also be greatly reduced. The large amount of work accomplished, to the stamp, by the use of a mill like the one here presented, is due to the rapid repetition of blows, and greater impact given to the stamps.

The Overland Monthly—Is it Established?

The November number is out with a number of very attractive subjects (of course) in its table of contents: The Chinese Labor Problem, Ceylon, Fur Seals,—and a very little bit of sentiment, if any, besides the poetry. The *Overland Monthly* pays the publisher, and the editor, and the writers, all. There is, therefore, no doubt left on the question of its permanency. But even if the income were not equal to the expenses, the *Overland* would yet be a success; for it has now come to be well known and appreciated by a great community of readers, to every one of whom it is counted worth triple its price in cash—in fact, indispensable. Not only are we all obliged to buy it in numbers, on account of the valuable special articles it contains which must be kept, but we find it economical to have an extra copy running along, to send to our friends in the East. The *Overland Monthly* is the organ of the intelligence of the "Far West;" it is the index of the life of that constituency. We find far from all its articles good. The *Overland* writers occasionally deserve sharp criticism, as do the *Atlantic* writers, and some others of the magazinists who are not deemed worthy of such attention. Newspaper readers are tired of seeing the *Overland* praised. Let it meet the ordeal of a liberal pointing out of its faults wherever deserved.

THE AUSTRALIAN DIAMOND AS "BIG AS A LEMON."—Either a diamond or a topaz certainly, has been found in the gem sand, the formation characteristic of diamonds in Australia, discovered on the Sydney side, near Mudgee; and *if* a diamond, it is worth $20,000,000 or more, weighing nearly eight ounces, or about 900 carats, or 3,600 grains. The total value of diamonds found in Australia before the end of 1866, is reported to be $400—less than the value of those found at Cherokee Flat, in Butte county, which have been worth in all probably more than $500. Since the close of last year, new diamond diggings have been discovered in Victoria. In July last, one claim turned out 119 diamonds, one weighing 5½ carats.

Mechanical Progress.

New Steam Boilers.

S. C. Salisbury has planned a boiler which is thus described in the New York *Tribune:* "The coldest water comes rapidly in small quantities between two hot plates under such a pressure as to cause a circulation from the main boiler to the water arch. This arch is surrounded by intense heat, and the circulation is increased in rapidity just in proportion to the amount of heat in the furnace; and as it increases, it brings the colder water in contact with the hot plates, so that it absorbs the heat as fast as produced, and becomes highly heated. It is then discharged in the chamber above the water line in form of wet steam, and as it is driven in all directions among the tubes, they again supply the heat to prepare the steam dry for use. By this process an equalized temperature throughout all parts of the boiler is kept up.

Another boiler, illustrated in a late number of the London *Engineer*, is a "cylindrical shell with an internal cylindrical fire-box, from the crown of which water-tubes are suspended, hanging free into the fire. Into each of the water-tubes a siphon is inserted, which extends down into the water space of the boiler a short distance beyond the ends of the tubes. These siphons act as circulating tubes when the boiler is at work, supplying the water-tubes constantly with water from the water-casing, where it has a tendency to keep cooler than in the upper part of the boiler; by means of this circulation the temperature is equalized. The siphons avoid both scum and sediment by taking the water midway. When the boiler is blown off, the action of the siphons is to empty each tube entirely, and any dirt which may be present will be blown out."

Theory of the Blast Furnace.—The following is the opening paragraph of the chapter devoted to the blast-furnace theory in Prof. Crookes' new reproduction of Kerl's Metallurgy: "The treatment of an iron ore mixture in blast furnaces aims at the reduction of the oxidized iron, the carbonization of the reduced iron, and the separation of the carbonized iron from the slag-forming components by smelting. As iron is very refractory, but easily transformed by an admission of oxygen, the ore mixture and the fuel are charged in alternate layers in the furnace. By this means a uniform reduction and smelting of the ore is obtained by its direct contact with the coal and the ascending reducing gases respectively, and also as small quantities only are gradually smelted. If ore and coal were mixed together the coal would prevent the combination of the slag-forming components. And if the ore and fuel were charged in separate vertical columns, as is done with lead, silver, copper, tin and other ores, the reduction would not take place uniformly, the temperature in the smelting zone would be insufficient, and the pig-iron before the tuyeres not sufficiently protected against the blast. When charging in alternate layers, the lower charge of fuel produces the heat sufficient for smelting the ore charge lying above it."

Coned Car Wheels.—Joseph Fox writes the London *Times* that the "coning" the tires of railway wheels, with the view of facilitating their passage round curves, is a mistake. It not only fails to gain that end, but it causes such oscillation of the car, as greatly to increase the strain and the wear and tear;—and consequently, the expense of operating the road. Moreover, the dangor of running off the track at high speed, is much increased by this oscillation. Mr. Fox, who is a railway builder, has in the rolling stock, departed from the usual form,—an inclination of one in twenty,—and used only cylindrical wheels; and he writes that he has been highly "gratified with the satisfactory reports of the steadiness of trains supplied with them."

Steam Hammer Improvements.—The Pittsburg *Commercial* says the Steam Hammer Works in that city have adapted to steam hammers an improved balance slide-valve, and an improved extension cylinder head, which is constructed in such a manner as to permit the piston to be withdrawn, packed, and replaced in from three to four hours.

Atmospheric Brake.—The "Westinghouse brake" is thus described: "On the locomotive under the foot board, is a reservoir, and an auxiliary air pump which supplies this reservoir with air of from 50 to 60 pounds pressure. Under each car is a small cylinder, connected with the reservoir by an inch pipe, through which the air passes into the cylinder, the piston of which is driven out and thus applies the power to the ordinary handbrakes. Between each two cars, extending from one platform to the other, is a gum coupling, the valves of which are so arranged that when together there is a free air passage, and when the cars are separated, the valves close and prevent the escape of air out of the pipes. Each car is independent of the other. On the engine there is a three way cock, by which the brake is worked. When turned one way, it lets the compressed air from the reservoir into the pipes; when turned the other way, the air is permitted to escape from the pipes, and that releases the brakes. The engineer alone can work the brakes, and can use them to any degree of power he sees fit by letting more or less air into the pipes."

The "Setting" of Cement.—The *Engineer* says the cause of this has not yet been satisfactorily explained. Schulatschenko recently repeated the experiment of Fuchs, of mixing 100 parts of pure silicic acid, obtained from water glass, with 50 parts of lime under water, and found that the mass soon set. Such another mixture was raised to a bright red heat; and, when subsequently treated with water in like manner, it also became hard. That a chemical combination had taken place in the latter was shown by the comportment of pounded quartz with lime. By heating these together a silicate was formed; for from the ignited mass acids separated gelatinous silica. In the second experiment, therefore, the hardening of the cement must be due to the formation of a hydrate. In a third case a similar mixture was heated till it fused, and the powdered product, when placed in water, did not set.

New Process of Refining Iron.—Under this head, the *London Mining Journal* describes a recently patented method which consists in subjecting molten cast-iron to the action of soda and soft hematite iron ore—or other oxide of iron—previous to puddling. For this purpose the molten cast-iron is run into shallow pans of a depth of 3 to 5 inches, and lined with a paste composed of a mixture of the materials above mentioned. When the metal is poured, a violent ebullition takes place, and a large portion of the silica—together with some of the carbon, phosphorus and sulphur contained in the iron—is carried off in the slag, so that when the slabs of purified metal are subsequently worked in the puddling furnace, the operations are effected much more rapidly than with ordinary pig-iron.

Vises.—A still further improvement in "Parallel Vises" is an adjustable collar, which causes the jaws to open or shut, upon the slightest movement of the handle. There is thus no lost motion; and again, if the shoulder on the screw should wear, the collar can be so adjusted in a few moments that it will operate as readily as when new. Another improvement, is an adjustable spring so arranged as to hold the handle of the vise in any position or angle at which the hand leaves it.

Transparent Paper for Draughtsmen. If the paper is damped with pure and fresh distilled benzine it at once assumes a transparency, and permits of the tracing being made, and of ink or water-colors being used on its surface without any "running." The paper resumes its opacity as the benzine evaporates, and if the drawing is not then completed, the requisite portion of the paper must be again damped with the benzine.

Boiler Incrustations.—M. E. Wieder hold, by a series of experiments, continued for a length of time, has fully proved that the addition to the feed water of fatty clays, especially the kind known as fuller's earth, entirely prevents boiler incrustations, even where very hard water has to be used. A loose, soft mud is deposited as soon as the motion of the water ceases, and runs off when the sludge valve is opened.

Phosphorescent Door-Numbers. — A French chemist who had probably hunted in the dark for a street number, has invented a method of making the figures and letters visible at night,—which consists in rubbing them with a prepared phosphorus-paste of his own devising.

Scientific Progress.

Grahamite—A Remarkable Mineral.

Prof. Henry Wurtz describes in full, in a paper read before the American Association, and now published in the *Gas Light Journal*, of Oct. 2d, this extraordinary mineral, named by himself, which he has examined with care both *in situ* and in the laboratory. He says: It is not only new, but it cannot even be *classed* with certainty as yet, with any other mineral substance known. It gives out no odor when rubbed or heated. To the action of acids, alkalies and oxidating agents generally, it is quite indifferent. Concentrated boiling nitric and muriatic acid, and even *aqua regia*, have no action whatever upon it; nor has boiling sulphuric acid, if somewhat diluted. Oil of vitriol, however, even in the cold, forms a brown solution. The most concentrated caustic alkaline solutions are totally without action upon it. Alcohol does not dissolve a trace of it. Naphtha, benzole and ether dissolve part of it; oil of turpentine gradually swells it up into a tar-like magma, and then dissolves most of it; but its true solvents are *chloroform* and *sulphuret of carbon*, each of which apparently dissolves nearly the whole mass of the mineral with great rapidity, leaving nothing except the mineral matter (ash,=by analysis, about two per cent.,) and some small proportion of coaly matter. When heated in the open air it endures a temperature far above that of the fusing point of asphalts without change; but when heated above 400° F. it begins to decrepitate, smoke and soften, behaving very much like a highly caking coal.

It has been pronounced an "inspissated petroleum" by Professor Lesley, whose acquaintance with it was, however, limited to the inspection of a few specimens, without visiting the locality. It was found in West Virginia, and occupies a vertical *dike-fissure*, cut across by a deep ravine. Prof. W. measured the horizontal extent of visible outcrop, and found it 530 fathoms —and 30 inches thick at one end, 8 at the other; the thickness at the bottom of the ravine, 70 fathoms lower, being on an average 50 inches. His idea of the manner in which it was found is, that the fissure opened at the moment, by the expansion caused by heat, was filled by an exudation, in a pasty condition, of a resinoid substance derived from some metamorphosis of unknown fossil matter contained in deep-seated strata intersected by the fissure or dike. It is not necessary to suppose a degree of fluidity greater than that of semi-fused pitch, or inspissated tar. Such a soft *doughy* mass, though flowing but slowly, would *in time* be forced by a very moderate pressure into every portion and into every crevice of the fissure. He considers it plain that it could never have been in the condition of fluid petroleum, for the reasons, first, that it did not penetrate the surrounding porous sandstones, and second, because nothing of the kind was ever known to have been formed by the oxidation and inspissation of petroleum.

Prof. Wurtz has recently decomposed grahamite into two distinct resinoid substances to which he has given the names *Viscosine* and *Irisine*. He has since found both these new substances in some asphalts which he has examined. The curious mineral in Colorado, reported four or five years since, believed to be albertite, and which he has recently had an opportunity to examine, he pronounces grahamite—almost identical with that of the West Virginia dike.

Fossils from Laurentian Limestones. Dr. Le Conte has brought home from the Laurentian limestones, a bushel or so of fragments of what Conrad, Tryon and other conchologists of the Academy agree in thinking to be a huge shell, whorled like a snail shell, a foot or two in diameter, turned into calc spar, coated graphite (proving its organic character), and a cast of its interior made out in iron ore. If this determination of its place in the order of animals be maintained, the discovery of its place in the order of the rocks is astonishing enough. But not more so, perhaps, than the recent discovery of highly organized plants in an almost identical position. A Scandinavian professor by the name of Torell has discovered stems, like those of reeds, neatly and finely fluted, with branches and rudimentary leaves, perfectly well preserved in the fucoidal sandstone layers lying at the very bottom of the Cambrian system, unconformably and immediately on top of the inclined edges of the Laurentian granites of Vestrogothia. —*U. S. R. R. Register.*

New Theory of Metamorphism.

Prof. Montagna, of the University of Naples, has just published a new theory of the metamorphism o rocks founded on "the phenomena of fossilization." It is written in the cause of the new school which repudiates all idea of the "granite floor" and "granite fusion," a "molten globe," etc., but prefers to see in granite nothing but sandstone, the particles of which have had time to rearrange themselves under the influence of moderately hot alkaline waters and great pressure. In spite of the tendency of this metamorphism to distort and destroy all fossil forms, Prof. Montagna announces his discovery, in granite, of vegetable remains, consisting of portions of *Lepidodendron* identical with species found in the coal measures; also of *Lepidodendron sexangulare* in a compact serpentine, and in certain porphyries. Vegetable remains are also cited as occurring in syenite. About seven-tenths of the numerous specimens of granite and granitic rocks examined by him prove their aqueous and stratified origin, by yielding plant remains, which are more evident the finer the grain of the granite. He remarks that these vegetable remains forbid the idea of heat being the agent in producing the metamorphism of the rocks. The *U. S. Railroad Register* says that Prof. Frazer, of the University of Pennsylvania, had an opportunity to examine Prof. Montagna's specimens of *Lepidodendra*, etc., from the granite of Southern Italy, during the winter of 1867-68; but to his eye their organic character was not indisputable.

The Swedish Expedition.—"Part of the expedition made a second attempt in September to reach the pole. Their ship touched 81° 42′ N. (17¼° E.); probably the highest latitude ever attained by any ship. The ice pack to the north, although broken, would not admit a boat, and its edge tended south as they went west, to 79° N. to 0°lon. Greenwich. On this stretch they met, several times, ice black with stones, gravel and earth; which would seem to indicate undiscovered lands to the north.

Making a third attempt, October 1, they steamed north from Spitzbergen, in a fog; met drift ice in 80° 40′, and followed its edge northwestward to 81°, and were then disabled by crashing against an iceberg, and forced to return, with two feet of water over the cabin floor.

Of all the expeditions in this direction, none but this has tried it in the autumn, after the melting of the summer ice and before the forming of fresh pack. It seems possible to reach 83°N. latitude at this season; but it seems settled that no further progress at this or any other season is possible, and the voyage is dark, cold and boisterous, with snow storms and dangerously heavy seas."—*Silliman's Journal, Sept.* 1869.

Rapidity of Photographic Action.—"The image of the full moon can be fixed in less than one-fourth of a second, and that of the sun "instantaneously." According to the experiments of Mr. Waterhouse, a space of time no longer than one twenty-seven-thousandth of a second is required to fix the solar image. Even this small fraction, however, inconceivably short as it appears, is a tolerable length of time compared with that in which photographs are taken by the electric flash. The duration of the illuminating spark, according to the experiments of Mr. Wheatstone with his delicate chronoscope, does not exceed the *millionth* part of a second, and yet a clear and distinct photographic image is obtained by a single electric discharge. By this means may be shown the real form of objects to which a deceptive appearance is given by their rapid movement. If a wheel on whose side any figure is drawn in conspicuous lines be made to rotate with the greatest possible velocity, the figure will present to the eye only a series of concentric bands of different shades. Let it now be photographed while in motion by the electric flash, and the wheel will appear stationary with the figure perfectly well defined."—*Prof. Merriman.*

Sulphide of Carbon Deodorized.—The offensive smell emitted by this substance may be removed by washing it first several times with water, and then introducing it into a large retort with a quantity of quicklime. After twenty-four hours' contact, the sulphide is distilled from the lime and received in a flask, in which has been placed a large quantity of copper turnings, previously calcined to remove organic matter, and then reduced by heating in a current of hydrogen.

REVIEW OF THE FAIR.

Classification of Articles.
CLASS XV.

FURNITURE, UPHOLSTERY.

Many of the notable articles under this class have already been referred to in detail, leaving for this review nothing necessary beyond a brief recapitulation of what there is in the Exhibition. Nearly all of the useful and ordinary kinds of furniture actually purchased in the stores here, made of walnut, pine, oak, etc., is imported, the bulk of it from Boston. Only the finer kinds are made here, of imported wood, or laurel, and Oregon pine, or sugar pine. No finer furniture is made in the world than some of that turned out from the shops of N. P. Colo & Co., Geo. Whitney & Co., and Goodwin & Co. The articles from these establishments, shown in the Exhibition, are, necessarily, about the same—chairs, bureaus, bedsteads, sideboards, etc.—but differ widely in their style of architecture and ornamentation. Mere description will scarcely do justice in this respect. Let those interested—everybody—go and see for themselves, while the best products of all are so easily comparable. All the wealth of the Eureka, the Hayward or the Eberhardt mines, could not require anything better than is made for their money by our San Francisco mechanics, with unexceptionable, and even highly artistic taste.

Handy Things and Inventions.

There is plenty of opportunity for the exercise of ingenuity in the design and arrangement of house-furnishing materials. Doremo & Strout make a fine hook-case and washstand (to appearance), which, on touching a spring, will open out into a first-class bed, complete in every respect. Another happy arrangement is the sofa-bed or "magic divan" of Thornton Westley, with G. O. Whitney & Co. Ordinarily it is the simplest and plainest of divans, very easy and comfortable. The back turns forward, and adds its breadth to that of the sofa. Its advantage is that it is cheaper than any other divan—about $27—of first-class material, hair stuffing. Mr. Westley also exhibits Howes & Hinkle's bed bottoms, consisting of wooden slats, very cheaply contrived into a bed bottom, that equals the spiral spring in some respects.

School furniture of all the approved kinds is exhibited by Warren Holt of the Pacific School Institute. Some of these articles in which patented iron castings are used in connection with legs or backs, are exceedingly handy as well as economical, for offices as well.

The window fixings and curtains of Whitney & Co., are superbly rich, as specimens. The outside adjustable awning of McDonald & Withers is one of those articles of comfort which are apt, from carelessness of the importance of small matters in life, to be neglected, yet which would be universally used by all who practice the arts of being comfortable, were they once acquainted of its merits. It is a means of tempering the light of the sun, and the winds and sands of our hilly city to the fancy or convenience of dwellers on exposed sides.

An inside window curtain roller of great merit, intended to admit of the regulation of light and air, from above as well as below—a thing quite impracticable with the ordinary curtain—is the Tay double roller, which rolls up the curtain to perfection mechanically, from the top or bottom, as may be preferred, and holds it in its place. The invention consists merely in a simple arrangement of cords, which is quite inexpensive. Mr. Tay has secured letters patent for this useful device, through Dewey & Co.

E. F. Hartshorne's patent shade roller rolls up like the ordinary one, from below, by the use of a spiral spring inside of the wooden roller. It is very effective, useful, simple and durable, and will answer a good purpose for mounting maps.

Carving and Inlaying.

Very tolerable carved work on a picture frame is shown by E. G. Piccaroli; and inlaid work by J. Gerhard, G. W. Pilheam, Elias Miller, and L. Castagnino, all in the art gallery. The latter artificer's work is especially worthy of examination, the number of elaborate figures in different colored woods on his tables and toilet sideboard being a wonder of patience, in this highly materialistic and utilitarian latitude and longitude.

Wire Work.

H. T. Graves again makes a splendid exhibition of a wire summer house, of patent spring seat chairs and wire cages, iron sofas, sieves, and a dozen other useful and ornamental new applications of iron and brass wire, which gratify taste and please the spectator on account of their ingenuity. Wire, it seems, is yet destined to be worked into all kinds of fabrics, and to be used for every imaginable purpose, in this extremely iron age.

Miscellaneous.

To this class belong also the birch bark child's cradle, made by an Indian woman 120 years old; the tea caddy of Henry Coms, composed of 3,305 pieces of wood and ivory; Strahle & Hughes' Laurel Palace and billiard tables,—the pyrographic wood ornamentation,—and the pictures frames in the art gallery, all heretofore described; piano stools of varied design, by Kobler & Chase; easy chairs, by Mrs. H. E. Morton and A. Litzeus, which are recommended to the attention of the luxurious; Forbes' pet of the boudoir, a sheet iron bar, with growing plants and flowers attached to the furniture, with very pleasing effect; the Elastic Sponge Co's stuffing; Wendel's drapery and lace curtains, done up on elastic frames and chenille fringe; Clark's paper hangings; Spaulding's window screen and sample of pressed wood; and Smith's shade fixture, working like Hartshorne's, but by a clock spring not on the roller.

Iron garden furniture is exhibited by Jacob Schreiber. The catalogue furthermore makes mention of some ladies' work tables made by Charles Gardner, which would be hunted up and carefully scrutinized by us, probably, if we were of that interesting sex; of Romer's polishing specimens, showing the effect of renovating rosewood; and of Hibbard & Sanborn's combination-wood posts, railings and balusters, referred to under "Wood Work."

CLASS XVI.

THE ARTS—FINE AND ORNAMENTAL.

Sec. 1—Oil Paintings.

Art in San Francisco is not an outgrowth or evidence of the luxury and wealth of the community. What there is of merit is here accidentally; yet we have amongst us the first of living artists; and California can boast having had more or less to do with the career of many men of merit who have wandered hither in search of adventure or of the beautiful. They generally "get out" at an early opportunity. The San Francisco public buys pictures at auctions—picture auctions—at bargains; painted, if the artist can paint at all, by wholesale, and for the eye of auction bidders, the frames being in this case, usually the principal item of cost.

There is something in our scenery and life that fosters art. Neal, the successful Munich artist, began as a San Francisco photographic colorist; Jump has jumped from here into a better situation East; Toby Rosenthal had his artistic ambition excited by scenes encountered as a boy in the streets of San Francisco; Keith has become inspired by our grand mountains, and has left us.

Nahl remains. Nahl has a certain work to do for California, or he would have shaken the dust of San Francisco from off his feet 15 or 18 years ago. Last year his picture of Joaquin remained for two months after the Mechanics' Institute Fair before it was sold, at $200. He is engaged on remunerative orders, but should be more widely appreciated for the points in which lies his peculiar strength,—the portrayal of life and motion in scenes of heroism and adventure. The small picture of the calf and Indian girl exhibited by him this year, will serve as an example of the motion in which he would excel even in the Dresden gallery, the new Panakothek, or the Royal Academy. Objection is made to the Bridal Race on account of stiffness, but the picture should be seen at a sufficient distance, when it will be found very true to nature in the matter of motion and sentiment.

California and Oregon have enacted history, and more, since 1849. Books can perpetuate but little of it all. The artist is requisite,—but not the auction artist. Our times call for the man who works not chiefly for pay, but from love of the scenes that he portrays. Nahl's pictures of Californian and explorer's life would bring higher prices in the East, and in Europe, to-day, than they are doing here. It is fortunate for us, and for our future literature and the character in history that is to belong to the gold adventurers of the 19th century, that there was a certain infatuation, perhaps a passion, that prevented Nahl from returning long since to communities where he would be judged according to his merits.

The Bridal Race was painted to order for Charles Crocker, Esq.

Toby Rosenthal's "Joys and Sorrows of Spring" is sold for $650. Toby is really considered a very promising artist by his superiors in Munich, and will certainly find remunerative occupation in the East, if he does not in California—which is a matter of doubt, unless he should paint for the auctions. He will go to Rome, and remain in Paris for a time.

The Press has already made reference to Walker's and Wilson's pictures. The former paints western coast and marine scenes,—our glorious Panama voyage sunsets, with our own helmet rock and ocean beach thrown in; besides portraits of merit, the one of himself being excellent. Wilson's landscapes are English and Scotch. Denny loves the roar, and sweeping, and tossing of a storm. His top schooner in a cyclone, pilot boat No. 2, wreck of the Viscata, and sunset in the Golden Gate on a drizzly winter day, are all pictures worth having.

Burgess' water colors, on Frazer river, and Yosemite, and Sevcrance's coast scene in the Sandwich Islands, are very pleasing, and show favorably the points of superiority of water color over oil. Burgess' portraits are much admired.

Bush's Straits of Carquinez and Castle Peak do justice to him, being rich and true to nature. His Donner Lake, Tahoe, etc., are inferior, and should not have been exhibited at all, in justice to himself.

Hannah Millard's Study in the Woods, water color, evinces a taste and skill that will accomplish other successes.

Section 2.—Statuary, etc.,

Mezzara's cameos are really superb, and they would be enough for one artist to place into one exhibition. Mezzara is a first class artist in cameos, such as would command large prices even in Europe, under the competition of the best competing sculptors laboring in that field of luxury and taste. And there is something so pleasing in a fine cameo, which meets and gratifies the eye of everybody, and everywhere, that it deserves the title of pre-eminence in popular art. Cameos are sometimes cut into a kind of mussel shell, in which there is a pure white and a flesh colored layer, the former being used for the features of the face, and the latter for the back-ground. But they are much more valuable when cut into agate, opal, or carnelian, with similar strata, because more permanent. We have cameos from the times of the ancient Greeks and Egyptians, who practiced the art of cameo cutting. Artificial preparations, were then, as now, used for the same purpose, the *vitrium obsidianum* of Pliny having been something of the kind.

The life-size bas-reliefs of Mezzara, modelled in plaster and composition, are equally meritorious, as evinced especially in the features of William Alvord, "L. P." and Judge Field. His life-size nude statue of the Goddess of Music discloses lack of laborious study from life models, which is the foundation of the sculptor's success. This statue is purely animal—has nothing ideal in it like the exquisite "creations" of Palmer—and is far from perfect as an animal representation. Palmer, the Albany sculptor, by the bye, has never been to Europe to study the renowned productions of classic sculpture. He creates only after the creator, models into stone only beautiful things fondly sought for and found by him in American character and life. He is, therefore, pronounced the most original, and by many the greatest sculptor living. He adds something new to sculpture that will stand and be renowned in future ages, by the side of the immortal stones from the ruins of Greece.

There is quite a batch of statues at the Fair, but they strike us as nearly all between ordinary and bad. "Hope," exhibited by Leon R. Myers & Co., is a worthy exception—a thing of beauty that will bless the purchaser.

Photographs.

Our grand and peculiar scenery, of mountains, plains and valleys, is no longer a novelty, and the world renowned photographs of Watkins, and Houseworth, called into existence by these natural surroundings—art propagated and bred by nature in this favored clime—cannot be dwelt upon in '69 as progress to be chronicled. Watkins has added to his store of fame many of the inspiring scenes of the Columbia, and a few of the northern coast. "Helios'" Alaska scenes, we regret, are not in the Fair. The beauties of Puget Sound, the Georgian Channel, and the northwest coast, are as inexhaustible as the coasts of Norway; and by the time that our Northern Railway is finished, or sooner, we shall require photographs of those beautiful shores for tourists, as we now have them of the Yosemite.

If anything deserves decidedly favorable mention this year as an advance in the photographic art on this coast, it is the Rembrandt style of photograph exhibited by Bradley & Rulofson. These artists last year made nautical and rustic scenery of backgrounds a specialty, by which the mechanical stiffness of common photography was to some extent relieved. This year they have something new which is creditable, because it evinces and requires the addition of artistic qualifications to those of the common photographer. We refer to their novelties in the management of light. The art of photographic "artists" generally consists in posing, and screwing the sitter's head, and delaying, until there is scarcely an iota of natural expression left in him, unless he be a consummate actor. Women from this cause (?) usually photograph better than men. When nature cannot be modified in the result, let the photographer make the most of his accessories. The "Rembrandt" photograph brings out beauties of countenance and expression that we have been in the habit of deeming beyond the scope of photography.

Of the other first-class extensive photographic exhibitors, Kisin excels in his large rural and cottage views; Bayley & Winter, in their large photograps from line engravings, porcelain pictures, and large colored portraits; Shew, in his very large plain portraits of all the notables of the Far West; J. A. Todd, of Sacramento, in excellent cabinet portraits, and the handsome features of the persons photographed; and Vaughan, in life size photographs retouched in oil.

Wood Engraving and Lithography.

Mr. George H. Baker's lithographic establishment has produced much that is woven into the history of the Pacific coast, a mere hint at which is conveyed in the few designs placed on the walls of the statuary gallery. The specimens of wood engraving on exhibition, are placed in the catalogue in Class XII, and have been previously noticed in this review.

Drawing and Penmanship.

Seregni's lettering, penmanship and pen drawing, done in imitation of steel engraving, is superior to anything of the kind ever produced in these Fairs, and is worthy of being classed amongst works of art. The Pacific Business College and California Business University, show about a dozen frames of model penmanship in many styles, none of which suit us as well as the heavy, large, round Scotch hand, that we sometimes meet with by an old country clerk. The architectural drawings of R. M. Williams and J. E. Wolfe look business like, and are certainly good.

Section 3.—Sign and Scenic Painting, Staining and Graining.

Chefs d'oeuvre from the principal sign painters, are on hand, in fine style, as usual. Amongst the new things to be mentioned is a peice of fresco painting by F. Pellegeine, which is scarcely large enough to display the artist's taste or capacity. Perfect specimens of graining and imitation staining, are exhibited by G. A. Brush, near the burglar-alarm cottage.

Section 4.—Wax Work, Hair, Moss, and Artificial Flowers.

A column could be written on this class alone, which would prove, however, more personal than interesting or instructive. It would be pleasant to dwell upon the history of almost any of these productions of feminine art. There are beautiful shells, and delicate mosses, and the hair that betokens the life of loving ones,—gathered in days of extreme happiness, or of sorrow perhaps, and stored away in little boxes and glasses, for years, but finally worked in odd moments of leisure, into products of taste in many cases exquisite. How much of sentiment or of the heart can enter into a simple little manufactured commodity, none can tell but the manufacturer. Sea shores, woods, mountain tops, lakes, homes and associations the most precious. Wax working and artificial flower making rise to more importance, being neither more nor less than sculpture, and ladies who engage in them should not dawdle on posies merely, of the common sort, but attempt faces, and designs for carvings and plaster casts. Potters' clay will work better than wax, but must be kept wet to prevent cracking. Sculptors work in clay.

The shell frames of Mrs. John C. Daggett are unusually elaborate, and are of value conchologically, being very varied and numerous, and of the natural color. Miss Blauche's wax work has the beauty and

purity of design of angel hands. Naughty Mary Pennie has made a wreath of poison oak, yet is not poisoned. Indian wax work from Mexico; bead-work and embroidery of real merit, by Miss M. A. Murphy, Mary Barron, Maria Sutherland and others, and Mrs. Cook's hair jewelry, in five frames, etc., are worthy of special mention and examination.

CLASS XVII.

MUSICAL INSTRUMENTS.

Except Zech's pianos, there is nothing native or new whatever to mention, under this class; and Zech's enterprise in San Francisco has been heretofore commented upon. One thing seems certain, that if Zech did not make better pianos at the price of the imported, his establishment would very soon have to stand idle. He exhibits five pianos, and one set of piano keys, to enable the curious to study the anatomy thereof, besides desks of his own make.

Large and interesting exhibitions, to musicians, are made by Rosenberg, consisting of upright pianos, cabinet organs, harps with Paganini strings, etc.; and by Kohler, Chase & Co., consisting of Mason & Hamlin organs, Chickering pianos, etc. Brass Band instruments by Willis' band, with many winds and turns, are exhibited and for sale.

The only novelty is Schoenstein's orchestrion, a very large machine of its kind, with organ trumpets and bellows, and quite a number of extra cylinders (four feet by eight inches), on which are pricked the little creators of inspiration. A good ear for music will frequently prefer,—from the pleasure it conveys,—the hand organs to the machine music made by a noisy brass band, in the common mechanical performances to which we are treated, and supposed to listen to with delight. Soulless playing and soulless singing are a worse nuisance than mechanical music, because more pretentious, and more empty; the latter evincing the sentiment at least of a master mechanic, if not master musician.

CLASS XVIII.

FIBROUS TEXTILES AND FURS.

SEC. 1—WOOL AND TEXTILE MANUFACTURES.

We can well dispense this year with a showing of the products of the North Beach and of the Mission Woolen Mills, since we have a fine display from the Capital Woolen Mills, and from the Oregon City Woolen Mills, both of which establishments are new developments, dating since the holding of the last Fair. The showing in each case is modest, but like all else that hails from the interior, has an air of the bravely substantial.

The Sacramento Woolen Mill, through Mr. Greenbaum, the agent, at No. 119 Battery street, exhibits blankets, cassimeres and flannels, in variety and quality, embracing, it would appear, as much as could be found in an importing house, and in several respects more. The Oregon City Woolen Mill has a number of plain articles of cassimeres chiefly, made evidently for the market that demands them, and with a view to competition against importation. The agents are Brown Brothers, No. 4 Battery street. Barouche robes, mats, specimens of ramie, flax, Peter plant, and colored sheep skins, are also to be seen. The Pioneer Wadding and Batting factory of Hahne & Co., and the list and rag carpet weaving establishment of Alex. Mackay, are specialties of manufacture, highly profitable to consumers as well as to the producers. The former makes a very cheap and warm substitute for blankets; the latter a serviceable carpet for kitchens and country houses.

FURS.

Liebes makes a very large and interesting exhibition of Alaskan and imported furs. There is much mechanical labor expended upon raw furs, not merely in tanning the inside, but in working them through machines and peculiar processes whereby the coarser hairs are made to disappear, and only the softest down is allowed to remain. The transformation of an Alaskan seal skin under this process is so extraordinary that the raw and the market article could not, without assistance, be recognized as the same thing. A prepared or marketable specimen exhibited by Liebes, is valued at about $100; a raw skin of the same quality, costs $1.50. The profits and secrets of the fur business evidently consist mainly in the treatment to which furs are subjected, since other skins exhibited as belonging to certain animals, have undergone a like transformation. Besides seals, Liebes shows beaver, otter, mink, marten, and a number of large stuffed animals for display. His establishment employs 18 men.

SECTION 2—SILK AND ITS MANUFACTURES.

The premiums offered by the State for mulberry plants and silk cocoons, connected with which there was a proviso requiring competitors to exhibit at the Mechanics' Institute Fair, has had the effect to bring out specimens of every kind, from Los Angeles, Sacramento, Stockton and Nevada, chiefly sent by Hall, Hoag, Flint, Packard, Corbusier, Garey, Sauffrignon, Goddard, Smith, Muller and the California Silk Culture Co. The variety in size and color of the cocoons is the only thing that strikes the visitor. With all our talk, we have not yet made silk profitably. The mulberry premium is now denied; but the demand for eggs from Europe appears to be a matter of fact. J. H. Warwick brings us some native silk manufactured at Hudson, N. J. The hatters, regalia makers, shawl dealers, and Pacific Straw Works, (silk bonnet and illusion lace) completing this class, make generally rather an ordinary showing, yet enough to be of use to the student of manufactures.

CLASS XIX.

SEWING MACHINES AND NEEDLE WORK.

Very much indeed is embraced in this class, for it represents the employment and the time of just half of the adult population—that of the women, with a sprinkling of men thrown in to make our statement of the proportion true. The life and energies of half the population have little besides, that can be called industrial, to show. Our civilized society of to-day is so organized; we make it so. The gentler sex, that is so appreciated, and honored, and preferred everywhere, must not do anything but sew; and if they do that from necessity, it must be done on Jews' pay, in order that they may be compelled to learn by heart, in patient thoroughness, the hard yet beneficent (?) lesson, that their only salvation is in being lovely, and good and pure,—that men shall be led by their irresistible instincts to love and marry them. Is society's law the natural one? Both men and women rebel—many of the former, persistent bachelors who worship wealth and have no faith in women's virtues; a few of the latter, who go various ways, but bitterly to rue if they go wrong.

There are two ladies' coöperative societies represented in the Fair: the Ladies' Coöperative Union, which finds a market and compensation for sewing, and the Women's Typographical Union. Both exhibit the finest specimens of the arts of making clothing (for women, chiefly) and of typography. Concerning the latter and the launching out of women into varied employments, men say with truth that women can do about two-thirds the work of a man, and that they *will* generally do it about two-thirds as well.

For general information, worth knowing by those who ask young ladies to go with them to the theater, concerts, or the Fair, we will state that a seamstress' wages are in San Francisco $1 a day; if she can work well with the machine, perhaps $1.50; a dressmaker's wages, $2, to $2.50; "going out to service," $20 to $30 per month; a male journeyman printer getting $30 a week, a feminine typographer might earn, by the above rule $20 a week. Lady artists and engravers command irregular, and often more liberal prices,—from $25 to $30 per week, or even more.

The sewing machines coming under this class and represented—as they merely exhibit and do not compete, and are nothing new—as well as the multitude of superior products of the needle and loom that are to be seen, have all been enumerated in our classified catalogue; though there are specimens of tapestry and new tricks in seamstress' art that would be worthy of more.

IMPROVED SEWING MACHINE NEEDLES.

Two exhibits are made of easy threading Sewing Machine Needles—both California inventions—one by Mrs. Suplee, the other by Mr. John L. Boone. The former is threaded through a slot in the side of the needle opposite the eye, which necessitates the cutting away the entire support of the needle on one side of the eye. The patent claims granted in the Suplee patent, are for cutting the slot in the shape of an inverted v, (∧) so that in passing the thread into the needle it is first moved upward and then downward into the eye. The needles exhibited, however, (from necessity or convenience, evidently) are not made in that way, but are constructed quite similarly to the Ambler invention, shown in the patent office reports of 1863.

The Boone needle, instead of having a slot or niche through which to thread it, has a split, extending some little distance above the eye, so that by a slight tension of the thread against the point, the needle is so sprung as to readily admit the thread—making the act of threading the operation of but an instant, and one which can be performed with very little light. The chief advantage claimed by this over the Suplee, is its greater strength—the finger-like spring, covering the eye, acting as a lever or brace, in supporting the breaking strain upon the needle.

CLASS XX.

SECTION 1—HORTICULTURE. AGRICULTURE. SUBSTANCES USED FOR FOOD, ETC.—VINOUS PRODUCTIONS.

In stating the elements of national prosperity, agriculture takes the lead everywhere; next, mechanical and manufacturing industry, and third, commerce. The products of agriculture alone are nearly equal to both the other branches. California is no exception to the general rule. Bearing this fact in mind, it is to be regretted that the show of our agricultural and horticultural products at the present Fair is so much short of what it might and should have been. It might have been made a most interesting and attractive feature, especially to the unusual number of strangers that have visited this coast during the past five weeks. Had the full advantage of the opportunity been taken, it would have been especially potential in its influence upon future immigration. As it is, not a pound of our great staple, wheat, is shown, except a few bottlesfull put up for seed.

THE SILK DISPLAY

Also falls far short of that of previous years; yet it is sufficient to indicate that much attention is still being paid to this promising industry. Samples of trees are shown by Messrs. W. M. Haynie, F. S. George, L. Waldrum, J. H. Ferris, Mr. Burnet, I. N. Hoag and R. S. Clark, of Sacramento; also by Messrs. T. G. S. Jones, of Sutter Co.; Ed. Muller, of Nevada City; A. P. Smith and Servais Turner, of San Diego; James B. Welty, of Yolo; and F. J. Sauffrignon, Mrs. L. Prevost, H. S. Lubbock and L. Gambert, of San José; all samples from plantations of greater or less extent. Mr. O. W. Reed shows samples of a plantation of 30,000 trees. The show of cocoons and raw silk has already been noticed in another class.

HOPS.

The display of hops is confined to five bales, one each by Wm. M. Haynie, R. J. Merkley, W. Flint, W. D. Perrin, of Sacramento, and Mrs. Haas, of San Leandro.

SEMI-TROPICAL FRUITS.

The semi-tropical character of California is shown, though somewhat sparingly, to what might have been done, by almonds, from Mr. Rosenberg, of Sacramento; oranges, lemons and limes, from Mr. Ryan, of Sonoma; the same from Oak Knoll, and Martinez. Dr. J. Strentzel, of the latter place, also exhibits pomegranates, English walnuts, figs, and a choice variety of foreign grapes. B. F. Headen, of Santa Clara, exhibits oranges, almonds, black walnuts, and foreign grapes. Choice varieties of foreign grapes are also exhibited by L. A. Gould, and others; R. S. Thompson, of Napa, exhibits 14 varieties.

PEARS, APPLES, ETC.

The display of pears, apples, etc., is very excellent in quality and variety, though somewhat limited in quantity. Few things, outside from commercial facilities, are more attractive to strangers than fruits, and it is generally conceded, we believe, that while California has been steadily improving in her stock of choice fruits, the older States have made but little progress in this direction anywhere, and in many places have deteriorated. It is to be regretted that so little has been done at the present exhibition, to fill our Eastern friends with a proper degree of admiration at the pomological wonders of the country, when so much was possible.

VEGETABLES.

The vegetable growers have also lost a fine opportunity to advertise themselves, and the State. A few mammoth squashes from C. W. Tarlton, of San Jose, Robert Williamson, of Sacramento, and S. Hall, of San Leandro; some watermelons, etc., from Boggs Bros., of Sherman Island; a miscellaneous exhibit from the commission house of J. W. Gale & Co.; two 5-pound sweet and one 3-pound Irish potato, from J. O. Brown, fill out the list.

DRIED FRUITS.

We have three exhibitors of dried fruit; H. F. Hutchinson exhibits eight boxes; J. W. Peterson, four cases, and L. A. Gould, samples. Why is it that hundreds of tons of fruit are suffered to rot under our trees and vines, while we last year imported 2,200 barrels of dried apples, large quantities of dried peaches, several thousand boxes of canned fruits, 65,000 packages of raisins, over 3,000 bags of dried peas, to say nothing of large quantities of dried plums and small fruit? Drying fruit is a business which is both safe and profitable. Why do our farmers complain that fruit is so cheap that they cannot send it to market, while they are themselves buying imported dried fruit, every winter and spring? California should not only grow fruit, but put it through all the processes needed to utilize it and prepare it for the table.

SEEDS.

D. L. Perkins, the veteran pioneer seed raiser of California, is on hand as usual with his creditable show of seeds. His display this year, besides illustrating California's wonderful productiveness and the high perfection of her vegetable growths, also shows what can be done with newly reclaimed swamp and tule lands, as nearly all the seeds now shown were raised upon his reclaimed plantation on Sherman Island.

THE FLORAL DISPLAY, ETC.

The floral display, though very much dwarfed in extent from previous exhibitions, has been quite attractive and select in quality. E. A. Upton exhibits flowers in pots and cut dahlias in glass. The finest and fullest exhibition in this line, however, is made by Thomas Appleby, who exhibits elegant Japanese and other lilies, hollyhocks, Bolivia pampas, grass or fox tails, dahlias, verbenas, fresh from his nursery and beautifully arranged. Mrs. T. H. Hittell exhibits a beautiful specimen of Amaryllis plant, in full bloom. Four ramie plants and two tea plants are exhibited by R. G. Perkins; Theodore Bagge an Australian glory pea plant, and Capt. Blethen a specimen of the Peter plant and fibre. Several stalks of corn are shown by Wm. H. Davis 17½ feet high, who says he has six acres of the same sort growing which will average 12 feet high.

SECTION 2—NATURAL AND MANUFACTURED PRODUCTS.

As already stated, there is no flour or grain on exhibition; but their products is the form of bread, crackers, etc., is shown. Bread making has reached the dignity of a science, and one can form but a faint conception of the many palatable and enticing forms into which dough and its adjuncts can be wrought. The exhibit of the Boston Cracker Bakery will open the eye of the novice to the importance and variety of this branch of business. Their assortment comprises 130 boxes, cans and cases, filled with an almost incredible variety of good things invented to tempt the appetite and appease hunger. The Boston Cracker Company also exhibit an extensive assortment in the same line. John D. Feldbush exhibits a 22-pound loaf of bread.

Sugar refining has become a most important branch of industry in this city, involving a very large amount of capital, and turning out an article equal to the best of the Eastern manufactories, and at prices which have very nearly or quite destroyed ontside competition; yet the California Refinery, on Brannan street, is the only one of the several establishments which makes any exhibit. Their sugar is pressed and crystallized in the form of bricks or cakes instead of in loaves, and by a new process, lately invented by Mr. Claus Spreckles, one of the proprietors. Great saving in the cost of refining is claimed for this process.

The company exhibits crude dark colored sugar, as imported, and that which is refined—pure and white as the driven snow.

COFFEE, OILS, SPICES, ETC.

D. Ghirardelli & Co. made a fine display of spices, cocoa, coffee, broma, mustard, chocolate, cream of tartar, etc. Brigandello, Macchivello, & Co. make a fine display of farina, maccaroni, etc. H. C. Hudson & Co. exhibit fine samples of assorted spices, oils, mustard, etc., from their mills in this city. Marden & Myrick exhibit coffee and spices, etc. There are also other fine exhibits of salad oils and dressings, of starch, pickeled fruit, fruit vinegar, decorative confectionary, jellies, etc., all put up and prepared in this city. The manufacture of this class of food, condiments, etc., forms an important branch of industry in

our midst, and nearly or quite supplies the entire demand for such things on this coast.

The only display of groceries noted, is that made by Bowen & Bros., the well known and popular grocers on Montgomery street. Their display, like their goods, as a whole, is all A No. 1.

SECTION 8.—WINES, BRANDIES, VINOUS PRODUCTS, ETC.

The wine interest is quite fully represented, although many managers of large vineyards and cellars, have neglected to exhibit. Among the most prominent we may mention the house of I. Landesberger & Co., who exhibit specimens of their champagne, muscatel and still wines, which, by universal consent, cannot be surpassed by any imported. The display of Mr. A. Finke also deserves especial mention. He commenced the business of making sparkling wines in this State in 1865, after an experience of some 12 or 15 years in Europe. The display of still wines is not so large as would naturally be expected from the great numbers engaged in the business. There are ten exhibitors of wines in all, and six of brandies. We have no time or space to specify, or even enumerate. We believe that all our wine-growers who make a good article, find ready purchasers; and judging from the fact that the imports of wines reach several millions annually, there is room for a large increase in this branch of industry, to supply even the home demand. This business will grow with the multiplication or increase of vineyards. Whether such increase is destined to affect favorably or otherwise the real prosperity and moral standing of our State, is a question which is exciting much discussion *pro and con*; but it is one, which we do not propose to discuss at the present time. We are now looking at the wine business in its commercial aspect, as a great and growing branch of industry.

Of bitters, cordials, ale, etc., there is quite an exhibition. McMillan & Kester exhibit syrups, bitters, cordials, essences, etc., in great profusion. L. Cross & Co. make a large exhibit of their IXI. bitters. F. & P. J. Cassin exhibit samples of Cassin's grape root bitters, and grape brandy. There are quite a number of other exhibitors in this department.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING OCTOBER 19th.

SNOW PLOW AND EXCAVATOR.—Austin H. Jackson, Bear Valley, Nevada County, Cal.

PORCELAIN VARNISH FOR PLASTERED WALLS.—William H. Kimber, Sacramento, Cal.

SPARK ARRESTER.—John W. Bowker, Sacramento, Cal.

GATE LATCH.—Daniel Sheets, Suisun, Solano County, Cal.

BOAT-DETACHING APPARATUS.—Daniel Brown, Astoria, Clatsop County, Oregon.

SAW.—Herman Cramer, Sonora, Tuolumne County, Cal.

AMALGAMATING PROCESS.—Paul & Wood, San Francisco.

GANG PLOW.—William Funk, Portland, Oregon.

New Incorporations.

FIRST JOINT STOCK CO.—Rio Vista. Oct. 9th. Capital stock, $9,000; shares, $100 each. Trustees: Joseph Bruning, A. H. Hawley, Geo. Frazer, J. D. Tilley and S. C. Brown.

BOOT FITTERS' COÖPERATIVE ASSOCIATION. Oct. 15th. Capital stock, $10,000; shares, $50 each. Trustees: Robert Moore, Chas. O'Brien, Dennis McSweeny, Edward Shay, Wm. Hughes, James Creed and Fred. Tomkins.

QUARTZ MINING CO.—Scott Valley, Siskiyou County. Oct. 23d. Capital stock, $50,000. Trustees: J. M. Trumble, Wm. Hobart and Louis Pitz

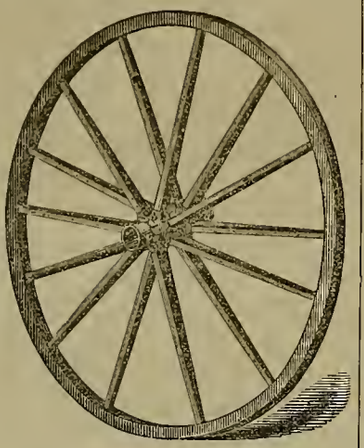
NORTH AMERICA CONSOLIDATED MINING CO.—White Pine, Nevada. Capital stock, $2,000,000; shares, $100 each. Trustees: J. F. Lewis, Thos. Wells, Jacob Bacon, J. A. Eaton and G. R. Spinnor.

MOHAWK MINING CO.—Gold Flat, Nevada County. Capital stock, $250,000; shares, $100 each. Trustees: Jos. M. Maguire, C. C. Palmer and G. W. Downey; Superintendent, Mr. Barber.

WANTED.—To rent a house of about six rooms, in a healthy location, near the business center of the city, for a gentleman, wife and baby. Will purchase or rent the furniture. Address X, box 17, P. O. San Francisco

Pool & Carlton's Tire-Tightening Wheel.

The illustration in the present number of the PRESS, represents Messrs. Calvin B. Pool and William Carlton's double extension tire-tightening wheel, which appears to be an important improvement in wagon wheels. The principle on which this improvement is based is simple, and in strict conformity to the unerring laws of mechanical force. The chief features in the invention consists of the hub, made of iron, being formed in two parts, one-half of the spokes being inserted in the part marked *a*, and the balance in *b*, which latter is moved upon *a* by the nut *c*. By this very simple arrangement, the spokes



are kept at an acute angle from the tire. This arrangement of the spokes makes the wheel very much stronger than any "dished" wheel, with the additional advantage that when the tire may become loose, a few turns of the nut on the screw which connects the two parts of the hub, reduce the hypothennsn of the angle, formed by the spokes, and consequently tightens the tire.

The principles on which such wheels are constructed adapts them for every class of vehicles, from the light sulky or buggy, to the heaviest freight-wagon for use on the smoothest "Nicolson" to the roughest side hills, because the spokes brace the wheels from all sides, and can be "stiffened up" when required in a few minutes by any man who understands how to turn a wrench.

The wheel is on exhibition near the Musie Room of the Pavilion. So simple an inventiou does not require any elaborate explanation, beeause every one who knows what a wheel should be, eau understand this one. A dry eountry like California will justify eonsiderable extra expense for a wheel that will obviate the difficultics encountered by travelers from the shrinkage of the wheels of their vehieles, and we shall look for the praetical success of this iuvention with much interest. A patent has been applied for. Further information may be had by addressing Pool & Carltou, Boise City, Idaho.

THE NEW ROBERTSON DITCHER.—Mr. W. D. Robertson has perfected his new plan of a ditching machine, and carpenters are engaged at present at the foot of Seventh street, in constructing the scow which is to earry the machinery. The scow is 47 feet in length and 7¼ feet wide on the bottom; the upper deck is 18 feet wide, and the draught of water will be abont 18 inches. It will be fitted up in the same manner as the ordinary dredging machino, but the scoop will work on a different prineiple. The scow is very strongly bolted together, and will be launched in abont three weeks. The vicinity of Sherman Island will be the first quarter where Mr. Robertson's invention will be applied.—*Bulletin.*

JOHNSON'S PATENT PORTABLE FENCE, whieh has been exhibited and admired as a useful and novel invention in the Fair, is being eonstructed, full size, at Woodward's Gardens, where its practicability will come in good play. Mr. Woodward thinks it is just the thing on his fine grounds, and probably elsewhere.

WONDERFUL SKILL is exhibited in the work of Stebbins' gig saw, exhibited by Geo. A. Day. We saw an ornamental piece cut out last night, which was a marvel for sawed work.

Varney's Amalgamating Pan.

This invention has proved its great worth and importance to the mining interests on this coast, by the high and permanent standing it has attained among millmen and metallurgists in almost every section of vein mining in the Pacific States and Territories.

Previous to 1861, pans were very little used for working ores. Such as were used, revolved from twelve to fifteen times a minute, and worked from one hundred to one hundred and fifty pounds at a charge. Of course, a large number were necessary to do the amalgamating for an ordinary mill.

It was possible to construct pans, as made at that time, of larger size, but it was not possible to run them faster, and thereby do more work with the same pan.

In 1861, Thomas Varney, of this city, invented an amalgamating pan and patented it in 1862.

This invention consisted of a pan of any size desired, with hard iron dies fastened to its bottom, forming the lower grinding surface. Above this revolved a circular iron disk or plate, to the lower side of which were fastened hard iron shoes, which formed the upper grinding surface. Through the center of this revolving plate or muller, was a large opening. Above this revolving muller, extending from the periphery towards the center of the pan, were stationary curved plates. The pan being filled, and the muller revolved, the pulp passes down through the center opening, is thrown to the periphery of the pan, prssos up around the ontside, against the curved plates, and is again by them conveyed back to the center—thus the revolving muller at once causes the ore below to pass from the center to the periphery, and above from the periphery to the center, thereby causing the pulp to flow in a constant stream between the grinding surfaces, and however rapid the muller may revolve, the pulp cannot be thrown out of the pan.

This invention at once enabled miners to accomplish as much with one pan as they formerly did with a dozen.

Its importance will be understood when it is considered that probably not less than one million dollars' worth of pans, on this prineiple, have been manufactured in this State.

Since the above invention not less than fifty diffcrent kinds of pans have been tried in this country. It would be safe to say that nineteen-twentieths of all the pans running on the Pacific Coast to-day are constructed on the prineiple of Mr. Varney's original pan. The inventor has made the amalgamating pan his special study during the last nine years, and he has made many important improvements in his pan. One of the most important is making radiant slots in the lower dies and filling them with wood so as to grind on its end. This wood is worn by the quartz a little in advanee of or below the surface of this iron, thus causing slight depressions. These being made by the ore, their depth depends on the eoarseness of the same. Of eourse they are constant and self-regulating.

This device more than doubles the grinding capacity of the pan.

Mr. Varney exhibits his most improved pan in the Fair, in whieh may be seen the above improvement as well as the following: The frame on which the pan rests is east in one piece. The driving shaft lies on this frame, passing through the center, leaving nothing to be adjusted in the mill. The driving pulley can be placed on either side of the pan, to suit the mill. The pan can bo sot on the legs either side to, as desired. The gear on the vertical shaft lies ou an adjustable stand, and ean be raised or lowered in a moment. The vertical shaft has a loose sleeve on its upper bearing, whieh always holds it in the center, and prevents wear. All the eenter bearings are oiled by pouring oil in tho top of the vertical shaft. The shoes on the mullers, and the dics in the pan, are fastened with wooden wedges, requiring no bolts or rivcts; and when fastened in they are necessarily made of exactly the same diameter. There is a changeable lining extendiug up some six inches from the bottom, preventing all wear on the insido of the pan. The curved plates are arranged in a new and simple manner. The pan works anywhere from five to eighteeu hundred pounds at a bateh.

Mr. Varney's laboratory is located at No. 229 Fremont street, adjoining Hanscom & Co's Ætna Iron Works, where persons interested can at all times examine this pan in all its parts, in connection with other erushing and metallurgieal machinery.

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Allegheny Cons., Sierra co., Sept. 24, 30c	Oct. 25	Nov. 15*
American, Storey co., Sept. 15, $1.50	Oct. 19	Nov 4
Bucklin, White Pine, Sept. 30, 5c	Nov. 6	Nov. 26*
Belcher, Storey co., Oct. 21, $2.50	Nov. 22	Dec. 11.
Central, Storey co., Oct. 1, $1.50	Nov. 4	Nov. 24
Coney, Amador co., Oct. 14, $5	Nov. 20	Dec. 13
Crown Point, Storey co., Oct. 15, $7.50	Nov. 20	Dec. 10.
Con. Chloride Flat, W. P., Sept. 16, $1	Nov. 1	Nov. 11.
California S. M., White Pine, Oct. 19, $1.50	Nov. 22	Dec. 13.
Chicago and Detroit Cons., July 16, 50c	Dec 4	Dec. 17
California, White Pine, Oct, 19, $1.50	Nov. 22	Dec. 13.
Daney, Lyon co., Nev., Oct. 13, $1	Nov. 15	Dec. 4.
Empire M. & M. Co., Sept 29, $25	Nov. 4	Nov. 24
Eweuing Star Cons., W. P., Oct. 19, $1	Dec. 1	Dec 20.
Chloride Flat Cons., W. P., Sept. 16, $1	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c.	Oct. 18	Nov. 6
Hearst, White Pine, Sept. 15, 50c	Nov. 1	Nov. 22
Hope Grand Detroit Cons., July 16, 50c	Dec 4	Dec. 17
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov 9
Julia, Virginia Dist., Oct. 15, 50c	Nov. 18	Dec. 6.
Maxwell, Amador co., Sept. 22, $1	Nov. 1	Nov. 24
Metropolitan, White Pine, Sept. 11, $2.50	Oct. 13	Nov. 3
Morning Star, Alpine co., $1.50	Nov. 15	Dec. 6
Meadow Valley, Lincoln co., Oct. 9, 25c	Nov 11	Nov. 30.
Manchester, Alpine co., July 16, 5c	Dec. 4	Dec 27*
Mammoth, White Pine, Oct. 28, 20c	Dec. 7	Dec. 28
Empire Bloomfield, Nevada co., Sept. 20, $5	Oct. 22	Nov. 8
Noonday, White Pine, Oct. 11, 50c	Nov. 18	Dec. 9
North America Cons., W. P., Sept. 27, 2½c	Nov. 1	Nov. 22*
Oneida, Amador co., Oct. 5, $10	Nov. 10	Nov. 30
Pinto, White Pine, Aug. 16	Sale	Nov. 11
Ripsen, Alpine co., Sept. 15, 25c	Oct. 30	Nov. 6*
Rathburn, White Pine, Oct. 26, 50c	Dec. 1	Dec. 22.
Siempre Viva, Mexico, Sept. 17, $1.50	Oct. 21	Nov. 5*
Senator, Storey co., Nev., Sept. 6, 5c	Oct. 13	Nov. 3
San Joaquin & K. R. C. Co., 10c	Nov. 8	Nov. 23
Segregated Belcher, Storey co., Oct. 22, $1	Nov. 23	Dec. 11.
Taylor, El Dorado co., Aug. 25, 20c	Oct. 4	Nov. 22*
Thunderbolt, White Pine, Sept. 14, 5c	Oct. 18	Nov 6
Tecumseh, Calaveras co., $5	Nov. 17	Dec. 6
U. S. Grant, Nevada co., Sept. 21, 50c	Oct. 22	Nov 13*
White Pine Mutual, Sept. 29, 5½c	Nov. 3	Nov. 23
Wells, White Pine, Aug. 10, 30c	Sept. 17	Nov. 4*
Wheeler, Esmeralda co., Sept. 20, $1	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

La Blanca, Mexico	Annual Meeting, Oct. 30.*
Empire	Meeting, Nov 1.
Sacramento and Meredith	Annual Meeting, Nov. 13.
Confidence, Storey co.	Annual Meeting, Nov. 12.

LATEST DIVIDEND.

Amador Co., div. $6 per share	Payable October 7, 1869
Alpha Cons., Storey co., Nev., div. $2	Pay. June 19, '68
Bacon, Storey co., Nev., div.	Payable June 19, 1868
Co ey preferred Stock, div. 1½ per cent.	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12 1868
Chollar Potosi, div., $1	Payable October 8, 1869
Eureka, div. $7 50	Payable October 8, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Golden Chariot, Idaho, div. $3	Payable June 15, 1869
Hale & Norcross, Tuolumne co, div 50c per sh.	Pay. Oct. 20, 1868
Hale & Norcross, div. $6	Payable July 10, 1869
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 1, 1869
Keystone, Sierra co., div., $12	Payable Jan 6, 1869
Kentuck, $20 per share	Payable Jan. 15, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1868
Pacific Unassessable, div.	Payable June 18, 1868
Santa Sierra Nevada, dividend $1	Payable Jan 15, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec 19, 1868
Savage, Virginia, Nev. dividend, $4	Payable May 11, 1869
Sand Springs Salt, Virginia, div., $1	Payable May 5, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct. 16, 1869
Virginia & G. H. Water Co., Dividend,	payable April 15, 1868
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

San Francisco Market Rates.

Wholesale Prices.

[FRIDAY, October 29, 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 50
Do. Superfine	4 25	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 10	@	1 65
Oats, ₱ 100 lbs	1 10	@	1 35
Barley, ₱ 100 lbs	90	@	1 10
Beans, ₱ 100 lbs	2 50	@	3 50
Potatoes, ₱ 100 lbs	75	@	1 25
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 50	@	14 00
Beef, extra, dressed, ₱ lb	7	@	10
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	6	@	6
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18¾	@	19
Do. Rio	18½	@	19
Tea, Japan, ₱ lb	75	@	90
Do Green	60	@	1 25
Hawaiian Rice, ₱ lb	8½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	60	@	70
Fahnestock, ₱ lb	75	@	88
Cheese, California, ₱ lb	15	@	19
Eggs, ₱ dozen	60	@	65
Lard, ₱ lb	17	@	18
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	50	@	50
do. Goshen, ₱ lb	25	@	40
do. New York, ₱ lb	40	@	50
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	70	@	75
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	—	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	25	@	30
Soap, Pale and C. D		@	12
Soap, Castile, ₱ lb		@	20

NEW TIN REGION.—A despatch from Los Angeles, dated Oct. 22d, announces the discovery of new tin deposits in the Coast Range in that county, near Elizabeth lake, 60 miles from Los Angeles city. A ledge 12 feet wide is said to assay one-fifth tin.

THE California Building and Loan Society which Thomas Mooney is President, has been liberal with the honest laboring money-savers, and is now doing a thriving business.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Leviathan.—*Miner*, Oct. 16th: Lumber is coming in over a good road just built, more men are being set at work, a large honse is going up, and it is said the furnaces, engine and other machinery for smelting works, are soon expected.

Imperial Quarries.—*Chronicle*, 16th: This company, up to Monday last, had made 1,200 feet of tnunel, and was within 360 feet of the perpendicular of the Florence lode. There is no claim in this country more promising.

CALAVERAS COUNTY.

Thorpe's Lode.—A correspondent of the S. F. *Times* writes from San Andreas: Thorpe's qnartz lode, half a mile south of Fourth Crossing, is remarkable for the width of its gold-bearing ore, being nearly a hundred feet between walls. The gold is of great fineness, assaying .930. The extraction of rock for the arastras is of the easiest kind, there being an inexhaustible body at hand. The depth reached is 50 feet, and the rock extracted has yielded ten dollars a ton.

Quartz.—*Chronicle*, 23d: Hopper & Chapman have their new hoisting works in operation; they are sinking their shaft, working day and night; the rock is richer than any previously taken out....Gay, Sanderson & Co. have attained a depth of 130 feet, and have had very rich rock from the top down....Lewis & Co. continue to roll out the metal....At the Palomo, they still ou their main shaft. The mill of 16 stamps is rnnning night and day....Alexander & Co., adjoining, are working with their usual cnergy. Their mill is in constant operation.

Gravel.—Harkins & Co. have made another cleaning up of nearly 400 ounces. ....The Coffee Mill is taking ont 200 car loads a day....Paul & Co. are running drifts and opening up ground for future operations.

Shaw is still piping away at his bank, and his drafts on it have never been protested.

INYO COUNTY.

Cerro Gordo.—Los Angeles *News*, 16th: A correspondent says: "This camp is flourishing. Plenty of rich silver and galena ores are being taken out, and rich developments are being made every day."

Specimen.—A friend sends a 30-pound specimen of argentiferous galena from the San Lucas mine, Cerro Gordo. The vein shows six inches in thickness, and the entire mass of ore is very rich in silver.

NEVADA COUNTY.

Eureka.—Grass Valley *Union*, Oct. 20th: The Eureka mill was yesterday cleaned up, after a two weeks' run, and the proceeds sent below. The amount realized was something over $20,300, not counting snlphurets.

North Star.—*National*, 25th: We nnderstand that this mine had a clean up Saturday, amonnting to several thousand dollars. Taking out rock will be suspended for the next eight or ten days—to put in a new 16-inch pump, and an engine.

Pittsburg.—Same of 26th: The rock still looks first-rate. We saw a small specimen which was streaked with fine gold and rich in sulphurets.

PLACER COUNTY.

Evening Star.—Auburn *Herald*, 23d: Wm. Quick, one of the owners of this mine brought to this office a piece of blue quartz, or yellow gold (there is some doubt which predominates, the gold or quartz) which weighed nine pounds, avoirdupois, and excels anything ever seen in this county for beauty and richness. This nugget was taken from the bottom of a 60-ft. shaft, and bears every indication of coming from below water level. We learn that they have another specimen almost as rich, at the mouth of the shaft, that it takes a good man to lift. This claim has paid from the top down, ranging, on the mill rock, from $50 to $250 to the ton.

PLUMAS COUNTY.

Good Prospects.—Quincy *National*, 16th: We are informed that Hand & Lothrop, who, for some months past have been running a tunnel at the foot of Hungarian Gulch, have struck "pay grit" lately.

Saw Pit.—The miners are all taking ont pay dirt. Most of the claims are looking well. The companies have completed their arrangements for the winter's work. None of them expect any water to wash up with before spring.

North Fork.—Correspondence of same: Boston & Bryan have got the river turned through their race, and will begin taking out money in a few days. This is one of the heaviest mining operations on the North Fork. The Dutch Hill Co. are doing very well. Ferguson & Wagner are preparing to bring a ditch of water on their claims (the old Cnmmings claims). Mechlin is digging a ditch to bring water on part of his claims on Barker Hill. He has ground that prospects well.

SISKIYOU COUNTY.

Good Prospects.—Yreka *Union*, 16th: The Scott Valley Qnartz Co. have got down 40 ft. on their ledge. At that depth it is from a foot to twenty inches in thickness. Mr. Sheppard, who is erecting a mill, has shown us specimens. Through the ledge there are seams of rotten quartz, perhaps an inch or two in thickness, which are completely impregnated with gold. In addition to this, the solid qnartz shows a great quantity of gold.

Paying Well.—S. S. Richardson, who brought the waters of Elk Creek on to some high bars on the Klamath just above Happy Camp, informs us that his claims are paying first rate.

TRINITY COUNTY.

Indian Creek.—*Journal*, 23d: Stoddard, Silcox & Conmbes are working the creek from bank to bank, and making it pay well. ....R. Silcox has purchased the Attinger ditch, and intends to mine this winter.

Douglas City.—Marshall & Mason's claim on Union Hill, from which so much money has been taken, is being put in readiness for water.

Martinsville.—Two miles below Gray's store, Thompson & White are constructing a ditch from a small creek to the bars at Horseshoe Bend. On one of those high bars, Mr. White, last winter, with the aid of the seepage water of some springs caught in a reservoir, washed out $400. The gold in those high bars is very fine all through the bank from the surface down. On the low bars and in the river bed the gold is coarse and can be saved in a rocker. Bonteeou is at work *a la* Chinaman, putting in the time until the season arrives. From $1.25 to $3.50 per day is the result.

Alaska.

Gold Discovery.—Sitka *Times*, Sept. 4th; Great excitement was created last Tuesday by the arrival of an Indian from the Tacoo country, who brought gold taken from a river that empties into Awk Bay 90 miles northwest from Sitka. The gold is of rich quality. Immediately after the discovery was made kuown, our citizeus engaged a few men to go out and prospect, taking along the Indian, and yesterday the party started by the Revenue Cutter, Lincoln. The Indian worked three hours, and took out from $1 to $1.25. This we consider very good pay in panning out with a shovel. Geu. Thomas has taken the specimens to San Francisco.

The same of Sept. 25th, says the party had returned. Besides the creek pointed out by the Indian, they found five other streams emptying near together, and gold in all of them; but the richest deposit was found four or five miles up the main stream at the foot of a fall of some hundred feet. They are confident that with proper mining implements, they can make twenty dollars a day. They commenced panning out and averaged twenty cents to the pan; but as soon as the Indians saw they were keeping the little particles found in the sand, they became troublesome, threw down the sand as fast as they shoveled it up, took away their ammunition, some of their provisions, and stripped one of the party of his clothes. They said they didn't want the Bostons to live there. They ordered the miners away, and threatened to kill them if they did not go. These men are anxious to return, accompanied by an armed party.

Arizona.

Lower Lynx Creek.—Prescott *Miner*, Oct. 9th: Some 25 or 30 miuers are at work in the vicinity of the old Mexican camp, making fair wages. The majority are Mexicans. Last week, some Americans who had just arrived in the country, went over to the creek, and while prospecting, found one piece of gold and quartz which they sold for a $20 greenback.

Wickenburg.—The amount of gold taken out by the Vulture Co. is far greater than people have any idea about, but their expenses have been great, they having to pay big prices for wood, provisions, labor, hauling of ore, etc. Their affairs, however, are now conducted with sharp economy, and their ore is as rich and as plenty as ever. The White Picacho owners are getting ready to work.

British Columbia.

Cariboo and Kootenai.—Victoria news of the 15th is as follows: The mining intelligence from Cariboo and Kootenai is favorable. Water is plenty, and the hydraulic claims are all at work. The claims on Williams creek are paying well. A new quartz ledge has been discovered on Mosquito creek. T. Allen, of the Dutch Bill Company, on Williams creek, met with an accident from a cave in the bank, by which his leg was broken. The Dutch Bill Company cleaned up 173 ounces for four days' run. Since last April the Coombs' claim, in Stout gulch, has yielded $50,000. Weaver creek, Kootenai, is said to be paying from $20 to $30 per day to the hand.

Idaho.

Ida Elmore.—Owyhee *Avalanche*, Oct. 16th: The main shaft is down 340 feet; the ledge continues four feet wide, and the ore is richer if possible than any yet taken from the mine; in the third level where stoping is in progress, the ledge is 2½ feet in width.

Golden Chariot.—A tnnnel is being driven on the fourth level, in both directions, on the ledge from the principal shaft. The width of the ledge has increased, and the ore is very rich.

Poorman.—A two-foot ledge of the best mineral that has been taken out of the mine for two years, was discovered a few days ago, south of the main shaft, in the fourth level, ou which a shaft has been sunk. The vein is wideniug.

Peck & Porter.—The ledge is abont two feet wide, of good paying mineral. They are stoping at a depth of ninety feet; the shaft is sunk thirty feet below this point.

Red Jacket.—The vein will average from ten inches to a foot, exceedingly rich. Drifting is in progress 80 feet from the surface. B tunnel commencing some three or four hundred feet north of the present works will be begun in a few days. This tunnel is to rnn in on the ledge, and strike the perpendicular line of the main shaft 150 feet below.

Allison.—Some of the richest silver ore that has ever been extracted from any mine in camp is now being taken from the drift 150 feet from the surface.

Potosi.—This mine is producing excellent ore. A tunnel on the ledge has progressed several feet, commencing two hundred feet above the shaft house. The ledge averages a foot and a half in width. Mr. Peck intends to continue work during the winter.

Items in *Wave*, 21st: O. H. Purdy showed us two specimens from the Keystone mine the other day that were full of the richest kind of sulphurets of silver, tinged slightly with copper. They came from the bottom of the shaft.

W. H. Clark has taken a contract to get out five hundred tons of Twilight ore in Flint. The work will involve the running of an 80 foot tunnel.

Loon Creek Mines.—*Statesman*, Oct. 19th: Mr. John Grande arrived yesterday from Oro Grande. He was one of those who went to Yellow Jacket, and he confesses to getting badly stung. The gold is very scarce, but the broken down mules are plenty. At Loon Creek everything is doing well. Many claims considered of little account are proving good. For instance, claim No. 61 below has developed four feet of pay gravel.

The *New Northwest* gives some extracts from a private letter dated September 22d, which it declares reliable. We qnote: "The claims now opened have averaged just three ounces per day to the hand, and some are paying far better than that. Jim Forrester took out a nugget last week that weighed $125.60, and a number of pieces have been obtained weighing $20, $40 and $50. The gold is coarse, and of good quality, assaying from $17.73 and $18.10, and passes at $18: The diggings, so far, have been confined between two cañons. The distance between is nearly two miles, with bars on each side. Last week a prospect was obtained at the head of the lower cañon of $5 to ten pans, and no bed rock.

Montana.

Phillipsburg correspondence of Helena *Gazette*, 14th: At Georgetown the Pittsburg and Wheeling companies are still idle. In fact, no enterprise is exhibited except by Camerou, on the Thomas lode, and the Mechanics' tunnel. Both parties have nerve, and are bound to win. At home we are taking out rock in case any stray mill should come along. The Saunders Company are hiring men for operations on the "Speckled Trout." They have a nondescript, with which they intend to separate the metal, preparatory to shipping East for refining. They intend to get up steam about the first of December.

Highland.—Letters to same from Red Mountain: The rich strike on No. 28 below in the main gulch proves to be a regular streak, and $798 to the set of 8-foot timbers is not above an average. There are four bedrock flumes to bedrock in Highland gulch and its tributaries. The Red Mountain Bedrock Flume Co., a mile and a half below Red Mountain City, has suspended operations for the season on account of the scarcity of water. This Company has a thousand feet of 20-inch flume, and owns over 3,000 feet of ground. Prof. Swallow's mill is rnnning upon ore from the Only Chance lode, and negotiations are pending for the purchase of 600 feet of the property by the Highland Gold Co., including discovery. This lode is developed to a depth of 200 feet, with a tunnel 345 feet long, striking the vein at a depth of 112 feet, and a shaft 87 feet below the adit level. At this depth the lode shows increased richness.

Snowshoe Diggings.—*New Northwest*, 15th: E. W. Pryor and Rufus Johnson, of Snowshoe, near Blackfoot, have 7,000 linear feet of bar and gulch ground, own the ditches and water right, and are working two hydraulics, two ground sluices and a bedrock flume, employing 14 men and using 500 inches of water. The product per week averages close to $2,000 gold. The bar, at the flume, is about 80 feet high, 35 of which is a soft bedrock, readily sluiced off, exposing a 30 foot bed of granite, paying from 10 cents to $1 to the pan. The width of the pay streak is unknown, a tunnel now going in has shown it to be at least 130 feet wide.

Nevada.

COPE DISTRICT.

Mountain City.—Elko *Independent*, 20th: We have seen several parties, this week, direct from Mountain City, and all bring good reports. Where work has been done on any of the ledges, they continue to improve. The Drew & Atchison mill will soon be ready for work. McDonald, the assayer, is kept busy in testing ore from the many new discoveries constantly made.

The same of 23d has a letter, from which we quote: "Since my last, many valuable ledges have been discovered. Sufficient work has not yet been done to develop their resources. Reports are coming in daily of new discoveries within a distance of twenty miles of this place. D. Krider, who took the contract to deliver the machinery for the Drew & Atchison mill, has safely landed at the mill-site all the heavy machinery. Uncle Johnny is straining every nerve to prepare the mill for work by the 1st of December. Rumor has it that a 5-stamp mill is on the way here from Chicago. We will keep all the mills busy that may be erected. The Porter Co. has selected a quantity of first-class rock for shipment to San Francisco. I have just visited the Hamilton mine, and have seen some of the richest rock yet found in this district."

MINERAL HILL DISTRICT.

Character of the District.—Elko *Independent*, Oct. 23d: The general formation of the country resembles that of Treasure Hill, while the ore bears a striking similarity. Vast deposits and irregular belts of wonderfully rich ore traverse the hill in all directions. But little work has been done in the way of obtaining depth, although in every instance where the veins have been sunk upon, regularity of dip and casing has been encountered, with a superior quality of ore. Fifty tons of ore worked at Austin, $23,000. The ore generally requires roasting. Spence & Co. have 200 tons of ore of superior quality on the dump. The hills are covered with thick timber. It is now settled that at least one mill will be put up before snow flies. The cost of hauling ore to Austin and having it worked foots up $75 per ton, while it can be delivered in San Francisco at a cost of $55.

Railroad District.—A discovery of a galena vein has been made by Frank & Armstrong, from which three tons of almost pure metal were taken out by two men in three hours, containing about $200 to the ton in silver. The facilities for smelting in this district are of the best. Wood in the vicinity is abundant.

REESE RIVER.

Manhattan.—*Reveille*, 15th: As was supposed by many, the purpose of the telegram on the 13th from President of this company, was to bring about a reduction of wages. A proposition to work for $3.50 instead of $4, as heretofore, was made to the miners. Some accepted, and were set to work. Others will leave for Virginia and California....The same of the 20th says: The Manhattan mill will be closed to-day for necessary repairs. It will be reöpened about the 1st of November, and will continue in operation during the winter.

New Style.—The name of the company which has succeeded the Twin River Co. in Ophir Cañon, is the Cambridge. We learn

that explorations will he pnshed in the Murphy mine of that company.

YANKEE BLADE.—Same of 20th: The strike of rich ore in the Yankee Blade mine of the American Co. last week, is important. The working is through a vertical shaft, now 300 ft. deep. At this depth a level was begun, intended to reach a well-known chimney in the mine; and in the slight length of 30 ft. the edge of the body of ore was cut.

WASHOE.

SIERRA NEVADA.—Gold Hill *News*, Oct. 23d: The drift has opened the ledge 63 feet, and the face shows the same rich ore continuing towards the northeast. Its width is not ascertained, hut it is over ten feet. The drift is now being timbered. The orc is soft and fine, easily picked down and shoveled, and car samples from it assayed from $100 to $160 to the ton; thirty two tons of it run through the mill yielded $4,200. It looks like silver ore, yet it yields principally froe gold. Independent of the new strike below the car track level, there is ore enough developed in the surface workings to keep up the present monthly dividends for a year.

OCCIDENTAL.—The face of the lower tunnel shows considerable improvement within the last few days. The winze from the 600-oot level of the old mine is 327 feet deep, and is in excellent pay ore all the way.

OPHIR.—The pump-rod broke on Thursday and fell to the hottom of the shaft. The necessary repairs will occupy several days.

HALE & NORCROSS.—Present yield 180 tons per day. The sinking of the main shaft is discontinued. It is 1,150 feet deep. A small streak of good ore a foot wide is encountered.

IMPERIAL-EMPIRE.—The cave and filling up of this shaft to above the 1,100-foot station, set back the work over four months. The shaft ia now cleaned out and repaired to within twenty feet of the hottom. Sinking will he reaumed in a week. The old upper levels yield 45 tons of ore per day. The receipts for Septomher aggregated $14,-636,09. No oro is being oxtracted.

LADY BRYAN.—The new mill is steadily running, and the month's receipts are expected to he hetter than ueual.

SAVAGE.—The yicld is not heavy; 380 tons of ore worked last week yielded $16 per ton, incurring a loss of $5,099.

GOULD & CURNY.—Ahout 40 tons of ore, assaying $40 per ton, is the daily yield, principally from the old uorth mine.

CHOLLAR-POTOSI.—The yield is about 125 tons per day. The hnildings over the new shaft is completed, and the enginc will be ready for hoisting inside of two weeks.

YELLOW JACKET.—The face of the north drift at the 900-foot level shows considerahle improvement.

VIRGINIA CONSOLIDATED.—New shaft 367 feet deep, and progressing at a satisfactory rate.

KENTUCK.—Ahont 125 tons per day is the present yicld, all from ahove the 800-foot level.

DANEY.—*Enterprise*, 24th: The new hoisting works are completed and the old shaft has been cleared of dirt, charred timhers, etc., and retimhered to the depth of 240 feet.

TAILINGS.—The piles of tailings in Gold Cañon might be measured by acres. They pay $5 to $8 per ton for working. The Birdsall Mill Co. own au immense lot of them, and run through 200 tons per day. They havo a substantial car track from their main reservoir to their mill.

WHITE PINE.

WEEKLY MINING REVIEW.—*Empire*, Oct. 24th: The general indications continue to be of the most favorable character, and the amount of ore being brought to the surface is steadily increasing. Mines which have contracts with the mills are generally shipping larger quantities of ore than usual, with a view to getting in the winter supply whilo the roads continue good. A few moro teams would find profitable employment during the next two months. The great payiug mines of Treasure Hill never looked so well or gave so much evidence of pcrmauence as at the prcsent time. The developments in the Eclipse Consolidated have cstablished the existence of a succession of horizoutal strata or deposits of paying oro on the Flats, whilc tho explorations of the Aurora and other mines have proven the existence of an immeuse vertical ore channel.

BULLION.—*Empire*, 24th: Our hullion shipments for the past week aggregate hut $48,790.14. The falling off is perhaps due to the fact that in the rush to supply the mills hefore winter shuts down, the ore has not beeu so carefully assorted.

The *News* makes the hullion shipment for the week $35,561.54.

MILLS AND FURNACES.—*News*, 23d: The Swansea mill, owned hy Perkins, Flint & Co., of San Francisco, is uow in full hlast. Taken as a whole, it is one of the hest of its size in the District. There is one rock-breaker, Blake's No. 3; two hatteries of five stamps, 750 pounds each; 8 tanks for receiving pulp, 11 by 5 feet and 3 feet deep; 7 Varney pans, and two 7-feet settlers, with agitators to match. Estimated working capacity of mill, 20 tons per day. The hoiler is 16 feet in length, and consists of 42 3-inch tuhes. The engine is of 45-horse power. The mill is running on a contract of 500 tons of ore from the Aurora Consolidated. The price we understand to he $20 per ton. The *Empire* says the property is valued at $60,000; and that it is capahle of clearing $2,000 per week, running on custom rock....The Stanford mill went into operation on the 20th....First hrick from O'Neil & Co's new draft furnace was shown the *Empire* on the 18th. The capacity of the furnace is six tons per day. ....McCoy's smelting furnace, in Eureka, has a capacity of five tons per day. The ore yields 75 per cent. of metal, worth in San Francisco $320 per ton.

ITEMS.—*News:* Aurora Consoldated sends 75 tons of ore to mill per day....Addington's first-class ore yields $221; eecond class, $80 per ton....The Autumn cut in Aurora South, is turning out very rich ore. ....Burning Moscow has struck $150 ore at 30 ft....Consolidated Chloride Flat is yielding 64 tons ore per day. A body of rich ore was tapped on Thursday.... Eclipse Consolidated struck a body of $1,000 ore on Wednesday....Eberhardt takes out 16 tons daily from the surface cut. The Defiance shaft in this claim is to he sunk to the depth of 500 ft. This will prospect the mine thoroughly....Hidden Treasure sends 30 tons to mill daily.... Treasure Hill M. & M. Co. eends 60 tons to Big Smoky mill daily....Wilcox has enspended operations during pending negotiations for its sale in Chicago....Linsley and others have sold several claims to the Great Basin Mining Co. of Philadelphia, for $120,000....Assays of ore from new claims on Bahylon Hill arc from $347 to $620....Bradshaw got a one-pound hrick from two pounds of hase metal ore hrought him the other day hy a miner who wanted to give half his claim for instructions how to reduce the ore. It was worth $320 in silver per ton of metal....The *Reveille* learns hy letter that a lot of White Pine lead hullion, refined in San Francisco, yielded only from $10 to $25 per ton.

OUTSIDE DISTRICTS.—*Empire:* Things in Spring Valley reported flourishing.... Splendid samples of chloride are shown us from the Post Boy in Pinto; assays as high as $400 per ton. A ten-stamp mill was going up at once for the Pinto Consolidated Co.... Mr. McMurray had 2 tons of Tem Piute ore, from the Inca and Demarara ledges, worked at Ben Evans 10-stamp mill in Hyko. Thc result was $578 per ton..... Mines in Kern District idle—making preparations for winter.....Mr. Barnes writes from Springville, in Shoshone District, October 16th: About twenty-five miles east of Springville some of the richest mines yet known, are said to have heen discovered. Hundreds have gone there, aud every one who returns is very much elated. Many pieces of rock have heen assayed here, which range from $200 to $3,000 per ton. One ledge, across the hase of the mountain, something over six feet thick, crops out holdly to the hight of thirty or forty feet. The range hearing mineral rock is some three miles in length. The excitement runs high here.

New Mexico.

THE PROSPECTS.—Elizabeth *Telegraph*, Oct. 2d: We have a large area of ground that will pay from six to twenty dollars a day to the hand. Seven hundred inches of water will hc brought in through the large ditch, already completed, at such a height as to enable miners to use the same water six or eight times, or even oftener. Quartz lodes are not yet sufficiently developed, though many are known to be good. The only mill in operation—Maxwell's, on the Aztec lode, fiftcen stamps—cleans up from five to seven thousaud dollars every week. The discoveries recently made on Red River, eight or niue miles from here, indicate a mining field second to none ou the line of the Rocky Mountains.

Oregon.

ORO GRANDE.—*Sentinel*, Oct. 16th: This company has struck a quartz lead in Applegate, Josephine County, that prospects well in free gold. We have some of the rock at our office, which looks rich. The vein is 12 feet wide betweeu casings.

Mining, Metallurgy, and Lawing at White Pine.

[Written for the Mining and Scientific Press.]

EDITORS PRESS:—I had intended writing to you sooner than this, hut the various combinations have changed so fast that I have really feared to do so, as I must have made many statements that were, to say the least, incorrect, or would he so hy the time they would appear in print.

LAW AND TITLES.

First, the suit then pending between the Original Hidden Treasure and Rathhurn, changed daily, I might say hourly—first one side, then the other, having the best of it; and finally after the Rathhurn had won the case, the fight, hy a *coupe du main*, was opened afresh, and tho Hidden Treasure folks, finding they could not gain, examined witness after witness, thus hoping to gain time to the close of the session or term, and wound up hy compromising, or paying the whole cost of the suit, with the hope of a final compromise, and leaving their case in this position to this date. Next, the Pogonip & Othello tried to retain counsel equal to the occasion for a pittance, and failing in this, employed third class lawyers, and lost their case in consequence. Then the varied and various manipulations of the Consolidated Chloride Flat Co., *vs.* all who held a claim to any portion of the Chloride Flat, and their attempting to carry their claim through on friendship; close on the heels of which comes the failure of the First National Bank, and every miner in the country loosing his earnings.

STATE OF THINGS—THE TOM PAINE AND EAST SHEBOYGAN.

It is almost impossihle to write a letter which will convey to the general reader an idea of the husiness as it stands in White Pine to-day. Our mines improve with each day's developments. The Tom Paine was honded to Messrs. Walker & Pierce, of Chicago, for $12,000, currency; is held to-day at $75,000, coin, and has produced more hullion than the original figures since it was honded. The Earl, sold about the time of my last, has returned to its purchasers fully the amount paid for it. East Sheboygan, which was, at that time, offered for a few hundred dollars, has made a vast improvement. Let me give you a little description of this latter mine: The owners first discovered that Treasure Peak was a "vast upheaval of slate," with a limestone surrounding, and hetween the two formations the rich and celehrated Hidden Treasure occurs. Acting on this, the owners located East Shehoygan, having disposed of the Original Sheboygan to the Mammoth Company. A shaft was sunk on the line, and at a depth of 24 feet tapped the ledge. Ahout that time Judge Bates, of Chicago, arrived here, and having carefully examined the mine, took its stock home with him for sale to his friends, hut failed to dispose of it. The Mammoth Company at this time were extracting very rich ore, and the owners of the East Shehoygan, not being allowed in the Mammoth works, commenced a tunnel helow the vein, with a view of tapping their shaft. This tunuel met the vein at a depth of only 18 feet, and in a few feet more were astonished hy hreaking into a large chamher, where they found the Mammoth at work extracting this rich ore. A chamher 60x30 feet had heen worked out. The vein is fully 14 feet wide, and the linee having heen defined hetween the two companies, they have now undisputed possession of 1,000 feot of the richest ground on Treasure Hill. In consideration of the ore extracted hy the Mammoth, they offer to give up some 75 tons of second class ore lying on their dump, hut I presume this point must hc decided hy the Courts. The Tom Paine having passed into the hands of Geo. H. Willard and Johu A. Paxton, is being devcloped very fast. A chamber 18 feet high, ahout 11 hy 12 feet, with a drift eight feet loug hy 10 wide, has been excavated into the hill, exposing a foot wall as clear and emooth as that of the Eberhardt, having a general southeast and northwest course. Several other openings have been made, and ore now appears on three levels. From four to five tons of milling ore are heing taken out daily, and a road connecting with the O'Neal grade has heen huilt, all expenses being covered hy returns from the mill.

METALLURGY AND BULLION PRODUCT.

The Aurora Consolidated Company are sending about sixty tons of *low grade* ore to mill daily. Treasure Hill M. & S. M. Co. do ahout the same except that their ore is higher grade, yielding about $80 per ton. South Aurora has commenced to ship their ore to the Stanford mill. I presume this mill will start up hy the first, as they have entered into a contract with the W. P. Water Co., for a supply of fluid. The water runs on Treasure Hill, and we are happy. Smelting furnaces are heing constructed in nearly every cañon in the Base Range, and a Chicago party have lately purchased two of these to experiment with, with a view of going largely into the husiness the coming spring. Our mills are increasing in numhers, hut as yet they do not aupply the demand, and it is almost impossible to get a emall lot crushed without waiting from five to six weeks. I look for a number of Eastern mills here early in the spring, and for milling to he reduced from $20 to $14 per ton. Very little assorting is done even now, as no ore can he fonnd having any silver in it which will not pay for milling. We contrive to ship ahout $300,000 monthly. G. B. E.

Treasure City, Oct. 18th, 1869.

Is the Mechanics' Institute a Local Institution?

Memhers of the Mechanics' Institute, and exhihitore of California products in general, are prohably not aware of the effect of the very ordinary-reading, and to them empty repetition of the word "California," in the Managers' circular on the suhject of premiums. From heing a Fair of the Industry of the Pacific States, American and foreign, the reading of this paragraph,—and the fact hrought to our attention that even the most important and meritorious original exhihitions or inventions hrought to the Fair hy any other than a *local* Californian, can or will he rewarded with a premium—makes us tumhle, in our owu, from the importance of a National Industrial Exposition, to that of one of the State Agricultural Societies. In point of fact, however, our Exposition is national, and international. Nevada, Oregon, Hawaii, Mexico and China contrihute. British Columhia alone has not heen heard from. But as the money that is expended for premiums is taken out of the proceeds of the Fair itself, it is certainly in the interest of California, and of San Francisco especially, that we provide effectually hereafter against this narrow construction and perception of the field of usefulness of the Mechanics' Institute of San Francisco.

SPAULDING VS. TUCKER SAW TEETH.—The trial of this cause during the week has attracted a good deal of attention, heing an action hrought for an alleged infringement of plaintiff's patent right for inserting movable teeth having curved lines in contact with the plate in circular saws. Tho jury rendered a verdict sustaining the allegations in plaintiff's complaint, and awarded plaintiff $1,000 damages. Messrs. J. B. Felton, Alfred Rix and M. A. Wheaton were counsel for plaintiff, and Messrs. McAllister and Bergin for defendants.

CEREMONIAL AND COMMERCIAL OPENING OF THE SUEZ CANAL.—The ceremonies of the opening of the Suez Canal will begin at Port Said on Novemher 17th. We shall read many letters yet, declaring that the Suez Canal is a failure, since the drifting sands of the surface and the quicksands that will work up from helow, together with the fact that the canal is not even now deep enough for large vessels, will deter commerce from this route perhaps for many years to come.

PRESERVATION OF WHARVES.—The piles that are heing driven into the mud on the new sea wall hetween Washington and Jackson streets, together with about 50,000 feet of the surface plank, have heen treated hy the Rohhins process, with sulphate of copper, hy the Pacific Wood Preserving Company, at their worke on Berry street. The result is insured to he a perfect protectiou from wet aud dry rot ae well as from the toredo.

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W. B. EWER.....Senior Editor.

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San Francisco:
Saturday Morning, Oct. 30, 1869.

Notices to Correspondents.

G. P. H.—Your questions are answered in our Illustrated Patent Circular, which is sent free.

T. A. H., Forbestown.—That invitation for discussion is still extended on the freest terms; it was only removed from the head of the column because considered a matter of form, that was scarcely longer necessary because understood. A "fight" on the theories of metalliferous deposits, against positions to which you assume that the Mining and Scientific Press is "commited," would not lead to profitable results; but if you can bring any new facts of your own collecting or observation in the mountains to bear, in brief form, our readers will doubtless derive profit. Touching the age and depth of California valley alluvium, you will find it hard to convince geologists that granite is a modern eruptive rock, or that the quartz found in veins was injected as molten matter.

Novel Stamp Mill.—The "Hotchkiss & Gardner Battery" is a new modification of the stamp mill, manufactured in New York, in which the stamps are described as being worked each by an independent piston, on a crooked crank shaft. A six-stamp mill ordered for White Pine, has six pistons, the power being applied to a pulley the same as in an ordinary battery, with a balance wheel on the other end of the shaft. There is an air chamber in the top of the stamp, by which the force of the blow is to be increased, and the compressed air is claimed to help lift the stamp—so says *Inland Empire*. The pistons are packed with leather packing. Driven by a 15-horse power engine, it will easily acquire a speed of 200 blows per minute for each stamp, and one now running in the East strikes 350 strokes per minute. On the hard copper ores of the East, the machine reduces forty tons per day.

Aricultural Envoy from Japan.—The last steamer from China brings us an experienced agriculturist of Japan, sent over by Eugene Van Reed, Esq., to study what plants can be sent here to profit. He is hunting up rice to make immediate experiments in its cultivation. He brings 4,600 chestnut trees and a bushel of seeds of the same tree, all of which are for sale and distribution.

Prof. Brewer, of the Sheffield Scientific School, returned to New Haven early in September, from his trip to the Rocky Mountains.

What About the Sutro Tunnel?

The balance of public sympathy is in favor of sustaining Mr. Sutro, in his tunnel enterprise; and if it were deemed highly probable that within five years the great work would actually arrive at the stage of completion, the expressions of popular and general sympathy would be in character overwhelming.

This is an odd position that the Sutro tunnel project has finally gotten into: the audacious black knight bravely advancing and swinging his broad-sword in the face of the money lenders of "the Bank," their lieutenants, and a host of stock manipulators, single-handed. Sutro insists that he *will* benefit them by running an adit level, for cheap drainage and cheap delivery and working of ores; but the controlling mine owners are averse to being so benefitted. They cannot possibly put up with it.

Mr. Sutro's intelligent undertaking of the project, his instrumentality in presenting to the public the only valuable printed information we have on the developments, character, richness, and geology of the Comstock lode, his pertinacity, for a number of years, and his systematic procedure, command universal respect. He has now been before the public long enough in, adverse favor from a large portion of the mine owners, to have called forth all the ill-reports that could possibly attach to him. We have heard nothing really unfavorable to him; as a man of integrity, and of solid deed, his reputation is equal to that of the best.

A significant circumstance in this juncture is the fact that the Miners' Union, a live body of men who do the work underground and in the mills, who produce the bullion from the Comstock lode, back Sutro with unqualified favor, and $50,000 coin. The "situation," in the history of the Comstock, is worthy of a Kinglake.

The geology of the Comstock lode, as compared with other silver ore deposits, is peculiar; and the later developments showing a general tendency of the vein to flatten toward the east, in connection with the occurrence of the remarkable horse near the surface, and the upper workings having been stock-works in character, have suggested to some of the mine owners doubts of the continuance of the vein in depth; but to others various hypotheses, one of which is to the effect that possibly the Monte Cristo vein might have closer connection with the Comstock vein than has been hitherto made apparent. Though the geology of the Comstock vein is very interesting, and certainly worthy of closer study, the main point to be guided by is as to the actual existence of economical ore at the greatest depths at present attained. It seems most reasonable to conclude that a vein of such richness in such longitudinal extent near the surface, must be at least good at the depth of from 2,000 to 3,000 feet. Parallel veins of more or less promise in the Flowery District, to the eastward, are also expected to be tapped, as a source of speculative profit by the Sutro Company.

The tunnel appears to be well warranted by the promise. The ground is most favorable for that method of working; since by tunneling 22,000 feet we get down 2,000 feet (the depth of some of the deeper mines), and make it possible to get down 1,000 feet further without great disadvantage—availing ourselves of the waters from the upper levels to drive machinery and pumps below the adit level. The deepest vein mining now carried on in the world—at the Samson mine in the Harz—is 3,000 feet from the surface. Were this tunnel completed the Comstock might be worked to a depth of 4,000 feet as easily.

We are told there is not much water in the depths of the Comstock to drain; its disappearance after descending from the upper levels suggesting crevices and faults or slides to a certain depth, in the country rock. Then the matter is chiefly one of raising and transporting the ore to the reduction works. The Virginia and Truckee Railroad Company will have something to put in, on this score.

The probabilities are that if the Comstock lode prove worth working at all below 2,000 feet, the tunnel will have to be opened by and bye. Nothing but good to the entire section can come from the completion of the tunnel, though the Sutro Company should become as great a monopoly in "controlling" the mines—at $2 for every ton of ore delivered,—as the "Bank crowd" are said to be now. Probability number two is, that unless the Miners' Union show much energy in supporting the tunnel project, it will lag, some day, in its weary progress, and both the tunnel and the mines then be controlled by a single incorporation or an equivalent combination. But if the ore deposits below prove treacherous and irregular or uncertain, the V. and T. R. R. may answer the purposes of delivery for all time. We vote for both.

New Gas Apparatus.—Quite a number of gentlemen were present yesterday afternoon, at the store of L. B. Brant, 303 Battery street, to witness an exhibition of a new mode of producing light from carburreted air. The principle is applicable alike to a single and movable lamp, or to any number of burners connected with a gasometer, in the ordinary manner. It consists simply in passing common air through any fibrous substance, which has been slightly saturated with gasoline. Where a single lamp is employed, the globe in which the burning fluid is usually placed is in this case filled with the saturated material, through which common air is forced by means of a blower driven by clock work, placed in the lower portion of the lamp. The apparatus is extremely simple, inexpensive, and free from danger. The lamp while burning, may be placed upon its side upon a table, or the floor, and rolled with perfect safety, and without extinguishing the light. Apparatus sufficient for 75 or 100 burners need not occupy more than five or six cubic feet of space, and can be made ornamental if desired, so as to be placed in a front hall as an ornamental piece of furniture. The gas is manufactured only as used. This is an Eastern invention, and a company has been organized for its introduction into use on this coast. The cost of this mode of illumination is but a mere fraction of that in ordinary use. The company is willing to guarantee that it will not exceed one-tenth that of ordinary coal gas.

A Valuable Book for Mechanics.—Dewey & Co., publishers of the M. & S. Press, have just issued a neat little volume of over five hundred well-executed wood cuts of the principal mechanical movements known. These useful representations of the various appliances of power, are printed side by side with explanatory notes, which makes the subject clear to every reader. Such a book should be in the hands of every mechanic, and form part of every public school library. It is a handy book, and cheap enough at $1 for every farm, shop, and factory.

Next Week we shall resume our Farming and Gardening and other departments, which have been left out of the Press during the Fair. Our agricultural and mechanical subscribers have received a large amount of interesting reading matter in the Fair reports.

Coming Back.—The Nevada *Gazette* says that several of the citizens of that county who recently went down to the southern counties to look into the chances of agriculture and horticulture there, have returned, satisfied that they can do better around their old homes.

Taxation of Mining Claims.—An able article on this important subject from Lewis Chalmers, will be found on another page.

The Saw-Tooth Controversy.

A patent trial of more than usual importance has just terminated in the U. S. Circuit Court, now in session in this city, before Judge Deady presiding.

In order to a better understanding of the points involved and decided, as well as because it is a matter of public interest, we propose to give a brief history of the main subject in dispute, viz:

Inserted Saw Teeth.

Prior to about thirty years ago saw-teeth had been universally formed from the plate and made to cut the requisite thickness of kerf by setting the teeth—that is, bending them laterally, one-half one way and one-half the other. At that time false or inserted teeth came into use. Their advantages are numerous and marked. They need no set, as they are made of such width at the point as to cut the desired thickness of kerf. The natural tooth must of necessity be of the same material and have the same temper as the body of the plate, while the artificial one allows the plate and tooth to be of such different material and temper as their different uses require.

The old method required the teeth to be filed, and the plate gummed, resulting in diminishing the size of the saw and great loss of time and files, while the new method allows the tooth to be removed from the saw, its point drawn at the forge, and when worn out to be replaced at trifling expense, thus saving time, tools and the plate. In case of accident to one or more solid teeth, the saw was ruined or reduced in size, while the loss of artificial teeth can be remedied in a few minutes by inserting others. Besides, the inserted tooth saw cuts easier and smoother than the old, the same power giving from one-fourth to one-third more lumber. These and other advantages soon brought inserted teeth into notice and use in various parts of the country, and their insertion into old and new plates, and the supply of extra teeth became a branch of the saw business.

The Old Mode of Insertion and Its Result.

The old mode was to insert the tooth into a square recess or socket in the periphery of the plate.

The corners of these sockets were rectangular. The tooth was kept in place by a V-tongue and groove about the edges of the tooth and socket.

The use of this angular socket resulted in the frequent cracking of the plate at one or both of the corners, especially at the rear one.

This proved a serious drawback. It affected the use of inserted teeth to a very considerable extent, and threatened their final condemnation.

But their other advantages were so positive and many that every effort was made to save them by finding some remedy for this one evil.

The plate was modified in thickness, strain and temper, and the socket was patched, enlarged and otherwise varied, but all to no purpose.

Thus the evil stood for twenty years, presenting to thousands of skilled mechanics and inventors in hold relief the problem of its remedy.

Spaulding's Invention.

In the fall of 1859, Spaulding, in experimenting at Sacramento, discovered that the desired result could be obtained by *forming the socket on curved lines.* For this invention he was granted a patent, and soon came to this city, and set up the business of manufacturing, inserting and selling saw teeth, according to his improved method.

That business has gradually developed into one of great importance. Almost every mill on this coast now uses his tooth either as made by him or others who are infringing upon his patent.

So effectually does the Spaulding device protect the plate, that of the tens of thousands of his tooth already used, not one has ever been known to crack the plate. Many saws have been run against iron and stones imbedded in the log, and every tooth doubled up, broke off and stripped from the periphery without leaving the least crack, check or injury to the plate. A specimen of a five-foot saw thus mutilated was exhibited on the trial to the admiration and astonishment of all beholders.

And yet so incredulous were millmen on its first appearance, that Mr. Spaulding was obliged to pledge himself to substitute a saw of the old kind in lieu of his in case of its failure, before he could get the consent of his customers to admit his new style of tooth.

To a casual observer, the effect of the invention is not apparent. Actual use is the only means of making it appreciated.

The peculiar structure of a circular saw, especially the internal strain imparted to its central parts in the process of stiffening it, and the peculiar forces it is required to resist, especially the vibration consequent on obstructions while under high speed, call for correspondingly peculiar safeguards, and herein lies the virtue of Spaulding's invention.

INFRINGEMENT.

Something over a year ago the American Saw Co., of New York, established an agency in this city, and commenced the sale of what Mr. Spaulding claimed as an infringement of his patent.

Spaulding immediately commenced suit against the agent, Wm. Tucker, who was, of course, sustained by his principal.

The case was prepared on both sides with great care and skill, and was fairly and thoroughly tried. Depositions were procured from several experts of the highest standing at the East, and several witnesses were brought from thence and gave in their testimony. During

THE TRIAL

the whole range of law bearing on the case was brought forward and discussed in a masterly manner.

All parties agree in awarding to the presiding Judge the highest commendation for patience, fairness, and ability.

It is an old saying among judges and lawyers, that patent cases involve the very "metaphysics of the law." Comparatively few judges or lawers thoroughly comprehend it. But Judge Deady, either from nature, study, or experience, or from all of them combined, seems to be peculiarly and well qualified to try this class of cases. In his hands what would seem to be complicate, confused and intricate, becomes simple, clear and certain.

The defendant denied the charge of infringement, and set up also that the plaintiff was not the first inventor. To support the latter defense, he offered in evidence a patent, issued to Jonah Newton in 1855, for a rotary disk, with curved cutters bolted to curved arms or projections, but the Court ruled it out, as having no resemblance to the plaintiff's device, on the point in question. The judge held that this machine was a rotary chisel, and not a saw. That the cutters or teeth were not inserted into any recess in the disk or plate—that there could not be any danger of the plate's cracking from any socket, and that there was no point of resemblance between the two machines in the practical art case in issue.

The defendant also offered to show that in almost every art, trade and manufacture, the same principle of rounding corners, putting in fillets, etc., had been practiced from the earliest times and was well known, and was ruled out on the ground that it was so well known as not to require proof.

The Judge ruled, that what was proposed to be proven must be deemed not known to both Court and Jury. But the inference proposed to be drawn therefrom, to wit; that because the plaintiff had made use of an old and well known elementary principle in the structure of his device, that therefore the device itself was old, could not be allowed, and added that the elementary principles of almost all inventions are old—that inventors have a right to put old principles to new uses, and have the resulting devices patented, but cannot have a patent for the mere new use of an old device.

His charge on this point was in these words:

"Now, the idea of the invention of this plaintiff (supposing that he invented this mode of inserting teeth) was the application, it is said, of a well known rule or law of nature, a mechanical property of matter; but it was the application to this particular art, in a manner never applied before, and producing a new and useful result, and it is patentable. Upon that point you will take the law as the Court gives it to you, that it is *patentable*."

The defendant also attempted to show that one of his witnesses had made the invention prior to the plaintiff, but the attempt totally failed.

On the question of infringement the defendant claimed to be not guilty, because of the great difference in the forms of the two kinds of teeth and sockets.

He claimed that the plaintiff's tooth and socket were made with straight sides and bottom, and simply rounded corners, while his were made circular about the entire back. On this point many experts were examined.

From the charge of the Court and the findings of the jury, it was settled that there was no difference in kind, but one of *degree* only; that one was curved more than the other, but that the curve in each served the same purpose, and that therefore the teeth and sockets in both saws were identical, and that the defendant had infringed.

The charge of the Judge on this point was as follows:

"If the defendant's saws or saw plates contain sockets or recesses for the insertion of removable teeth, and such sockets or recesses were formed on circular lines, and for that reason rendered the plates less liable to crack or split, then the defendant's saws contained the plaintiff's alleged invention."

The jury returned a verdict for the plaintiff, and assessed the damages at $1,000.

Of the justness and legal correctness of this verdict we have no doubt, and we congratulate the plaintiff upon the success of his suit.

He has invented one of the most useful of modern improvements, and built up on that invention one of the most important manufacturing interests on this coast.

It has been the misfortune of real inventors that the world contains a class of men known to the patent law as "*pirates*," who are ready to enrich themselves by pilfering the inventions patented to others, and under some slight change of form or construction, which almost all inventions admit of, undertake to hide their plunder. The trial just closed adds another to the long list of examples illustrating the truth of this commentary.

Judge Greer, in deciding a late case, says: "It is usually the case when any valuable discovery is made or any new machine of great utility has been invented, that the attention of the public has been turned to that subject previously, and that many persons have been making researches and experiments. Philosophers and mechanicians may have in some measure anticipated in their speculations the possibility or probability of such discovery or invention; many experiments may have been unsuccessfully tried, coming very near, yet falling short of the desired result. They have produced nothing beneficial. The invention, when perfected, may truly be said to be the culminating point of many experiments, not only by the inventor, but by many others. He may have profited indirectly by the unsuccessful experiments and failures of others, but it gives them no right to claim a share of the honor or the profit of the successful inventor. It is when speculation has been reduced to practice, when experiment has resulted in discovery, and when that discovery has been perfected by patient and continued experiments, when some new compound, art, manufacture, or machine has been thus produced which is useful to the public, that the party making it becomes a public benefactor and entitled to a patent.

"And yet when genius and patient perseverance have at length succeeded, in spite of sneers and scoffs, in perfecting some valuable invention or discovery, how seldom is it followed by reward! Envy robs him of the honor, while speculators, swindlers and pirates rob him of the profits. Every unsuccessful experimenter who did or did not come very near making a discovery now claims it. Every one who can invent an improvement, or vary its form, claims a right to pirate the original discovery. We need not summon Morse, or Blanchard, or Woodworth, to prove that this is the usual history of each great discovery or invention.

Parties who, in the face of this decision, continue to buy, use or sell the same, with teeth inserted either in whole or in part on curved lines, will be entitled to small sympathy if they should be held to a strict accountability.

All such saws, however the circular formation of the sockets may vary in appearance, are held as colorable modifications and evasions of the Spaulding invention, and infringements of his patent

Burgess' Patent Music Folio and Binder.

When we consider the extensive use required for an article like the one here represented, it seems, indeed, singular that some inventive genius has not before supplied a satisfactory article. But all who use sheet music have experienced the want of some convenient device, in which the pieces may be quickly inserted and held in convenient manner for use.

Hubert Burgess, a well known teacher of drawing in this city, we believe to be the first and only inventor who has succeeded in making a music holder which is complete in all its requisites. It is spoken of by musicians as a most perfect music folio and binder, far surpassing any other yet offered for sale.

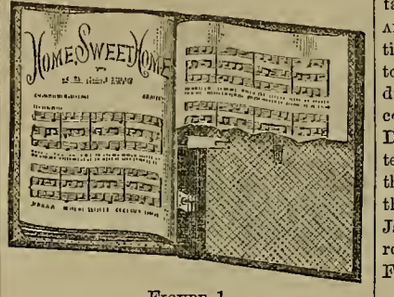



FIGURE 1.

Our engraving affords a very good view of the folio, partly filled with sheet music, opened and ready for use. The lower half of the sheets on the right side are represented as torn away, showing one of the two clamping bars in which the back of the sheets are held. By loosening the screws (one of which is shown) the clamps spring apart by springs not seen, so that an additional sheet of music can be inserted in any

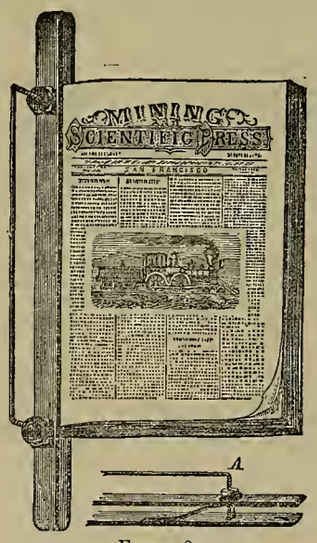


FIGURE 2.

part of the file desired; or any particular piece can be taken out without disturbing the position or changing the order of any others. The screws contain notches on two sides, by which they are turned up tightly by the use of the two-pronged key, one end of which is shown. A slot is cut in the back of the clamps, through which the key is inserted, resting against the cover and keeping it open and rendering the folio rigid while in its position on the music rack. Clamping the sheets in this manner in an open and rigidly held cover, causes the leaves to fold back when open and remain in convenient posture for use (in just about the position shown in the illustration) without any tendency towards closing. The readiness with which leaves may be turned, and the manner in which they naturally rest, is one of the important results accomplished by this invention. When the folio is to be closed, the key is withdrawn from the back and placed in a socket, the lower portion of which reaches just below the torn portion of the leaves shown in our engraving.

This invention affords an ornamental as well as useful and novel article.

The proprietors claim that the music can be placed in the folio quicker, neater and more firmly than in any other holder, and re-adjusted without any danger of tearing or otherwise injuring them.

The principle used in Mr. Burgess' music folio for holding the sheets, is the same as that of his newspaper file holder, in which the spring alluded to above, are shown in part marked A in the following figure, which was fully described in a late issue of our paper. We republish this cut so that the reader may more readily perceive the holding device of figure 1.

The patent for this invention was obtained October 12th, through the MINING AND SCIENTIFIC PRESS Agency. One entire half was assigned previous to its issue to James Stratton. Mr. Burgess has also disposed of his remaining one-half for this coast to Messrs. James A. Pritchard and J. D. Littlefield, of this city. It is their intention to commence manufacturing both the holder and folio for sale, at once. Further information may be had by addressing James Stratton, Oakland, or calling at room two, No. 423 Montgomery street, San Francisco.

Mr. Burgess is also the inventor of a patent pencil sharpener, already in use, and several other things of merit, including his popular system of drawing for public schools.

National System of Drawing.

Upon the wall of the middle room of the art gallery at the Pavilion may be seen a set of engravings published by Hubert Burgess, of this city, developing a somewhat novel system of teaching, what is styled the "National system of drawing," and designed, more especially, for use in common schools. Mr. Burgess has also published a pamphlet of twenty-four pages, setting forth the elements of perspective, and designed to render material assistance to those learning to draw from nature. An examination of this little manual and the accompanying diagrams or drawings, are sufficient to show that the art of drawing is not, after all, so difficult to master as many suppose. The principles upon which it depends are few and simple, and when thoroughly understood, will, with a little experience, soon lead to a practical knowledge of this beautiful and useful art. The "national system" of which the "elements of perspective" form only a part, is the result of many years of experience in teaching. There are numerous incidental advantages derivable from the study of drawing in common schools; among which we may mention, as of chief importance, the cultivation of the eye, and the steadying of the hand, qualifications invaluable for any occupation. Mr. Burgess will give a free lecture upon the principles of drawing at the rooms of the Mechanics' Institute, on Post street, on Thursday evening next, to which the public are invited.

THE MARSH HARVESTER.—Hawley & Co. exhibit at the Pavilion a new competitor for public favor in the shape of a harvester, for which several points of superiority are claimed, among which may be noticed: Light draft, ease of turning, saving from scattering, and in labor, etc. With two horses, a boy to drive, two binders, and one to shock up, it is claimed that this machine will do as much work as can be done with eight men and two to four horses with ordinary hand rakes. By the aid of machinery, the labor and expenses of harvesting have been greatly reduced, and that portion of farm work is no longer looked forward to with the dread and anxiety with which it was once connected. Our farmers will do well to examine this new machine, and judge for themselves of its merits. Messrs. Hawley & Co's warehouse is at the corner of California and Battery streets.

[From the Mechanic' Fair Daily Press, Oct. 23.]

Results of Enterprise and Industry.

In the year 1830, a visitor to the town of St. Johnsbury, Vt., would have remarked it as a picturesque, quiet village of a few hundred inhabitants, with a church, one store, a schoolhouse and a blacksmith shop. The surrounding country was settled by hardy farmers, principally engaged in raising flax, but owing to the great expense of transportation and the limited facilities for manufacturing, the products of the country were not available in improving the place.

About this time, Mr. Thaddeus Fairbanks invented the world-renowned Fairbanks Scale, known and recognized by all nations as the standard, and from that eventful period the growth and prosperity of this suburban village has gradually increased, until banks exist, stores and schoolhouses are numerous, and the little blacksmith shop of forty years ago has grown to be a mammoth manufactory, employing five hundred mechanics and consuming 2,500,000 feet of lumber, several hundred tons of coal, and four thousand tons of iron per annum.

Last year, Messrs. Fairbanks manufactured thirty-three thousand three hundred and eighty-three scales, and furnished the Passumpic Railroad with sixteen million pounds of freight. The disbursements of this company for wages alone, in 1868, averaged twenty thousand dollars per month. Thus, enterprise and industry populates towns and cities, builds railroads and factories, and brings to light the ingenuity of man.

The Decline in Stocks.—We, who go to work with our gloves off, says the *News Letter*, can state without circumlocution the real cause of the decline in stocks; they have been run up by persons forming rings for the purpose of selling out at large profits, and if they are low now it is because so many people have been ruined by them that, if they still have the desire to speculate in them, they have not the means.

More than $95,000,000 worth of boots and shoes will be manufactured in Massachusetts the present year, or more than the product of the gold mines of California during the past five years—illustrating the importance of encouraging manufacturing enterprise by patronizing home manufacture.

A Slight Misunderstanding.—A gentleman being in a room where a number of country girls were sitting without saying anything, said: "What an awful pause." At which a stout buxom lass, replied:

"I guess, sir, you'd have 'awful paws,' too, if you had to do all the scrubbing that I do."

Arrival of Butter from Chicago.—Mr. N. A. Butter, a celebrated merchant of Chicago, arrived from that city yesterday, to complete arrangements for the direct importation of tea. This is the most important Butter import ever received by rail.

A Spiritual Dog.—A pious old lady was asked why she named her dog "Moreover." "Why," she said, putting on her spectacles to find the place in her Bible, "It is a Bible name. Here: 'Moreover, the dog came and licked his sores.'"

A Zealous Anti-Baptist.—A baptizing ceremony at Melbourne, Canada, was interrupted Sunday, by a big brother of the young woman about to be immersed, who thrashed the clergyman.

There is a movement on foot in England to erect a monument to Adam, because he has the honor of being the father of all flesh. Jones says the man who originated the movement is a dam enthusiast.

Secretary Fish belongs to a family not described by Agassiz. He is not scaly—is neither a sardine nor a codfish of the aristocratic type. He does not flounder, has a soul, and is in a good place.

Ex-Congressman Spaulding is writing a history of greenbacks. The new work, though exceedingly interesting, is not intended for circulation in California.

All brutes are not quadrupeds, as any one may discover by watching the way some of our local teamsters treat their horses.

Dion Bourcicault is said to be writing a sensation drama on "Gold." He will not come to California for any of his material.

]From the Mechanic' Fair Daily Press, Oct. 25.]

James Lick's Machine for Gilding.

The covering of surfaces of bodies with a thin coating of gold, to impart to them a highly ornamental exterior, and one not liable to tarnish, is a very ancient and useful art. So also is the laying on of ornamental figures in gold, whereby only a portion of such surfaces is covered. This process is called gilding; but on account of the great cost of gilding material its use would be very limited were it not for its exceedingly extensible nature whereby a small quantity is made to cover a very large extent of surface, by being hammered out into exceedingly thin leaves.

Those portions of the surface to be gilded or ornamented, are first covered with some substance to which the thin films or leaves will readily adhere. Ordinarily, the leaves are then taken up, by careful manipulation, cut to suitable sizes, placed upon the proposed surface; after which, whatever does not adhere is carefully brushed away. Much handling and waste of gold is necessarily involved in this process. To obviate it, to some extent, by decreasing the handling of the gold-leaf, Mr. James Lick, of this city, has recently devised and patented a machine, by means of which the surface to be gilded is applied to the gold-leaf (instead of the leaf to the surface), while in the book, thus rendering the ordinary cutting and handling of the gold-leaf wholly unnecessary. The machine is readily adjustable, so as to be suitable to all sizes of work, and is simple and effective in its operation. The book containing the gold-leaf is placed upon a suitable support on an adjustable frame, where it is properly held, with the blank leaf turned up out of the way, while the glass or other material to be gilded is placed upon another adjustable frame and brought over and upon the leaf as it lies in its place in the book. So much of the surface as a single sheet of leaf will cover is thus gilded, and the book is moved along by proper fixtures, so that when the surface again comes down, it meets another leaf upon another section of the pattern, and so on until the work is completed.

The elegantly gilded glass frames shown in the central art gallery, at the Pavilion, were gilded by the aid of this machine; as were also the large frames to the mirrors which ornament the splendid dining room at the Lick House—the finest dining room on the continent. All the work, both in the Lick House dining-room and in the Pavilion, as well as a large amount of work in Mr. Lick's inside office on Sutter street, was done by Mr. L. himself, by the aid of the apparatus which he has devised and for which he has obtained letters patent.

The machine was devised by Mr. Lick at the time he was building his new dining hall, for the purpose of facilitating and more readily and perfectly accomplishing the gilding of the mammoth mirrors there empannelled. The ingenuity, industry, and perseverance displayed in this work by a man of the age and station in life occupied by the proprietor of the Lick House, is most remarkable, and furnishes an example of industry well worthy of imitation. This invention is not only important for its saving of time, by its precision of operation, but it must greatly economize in precious material. He who invents and publishes to the world through the Patent Office any process of economy is a real benefactor.

Boiler Fire Regulator.—Poillon's condensed steam piston packing has rendered practicable a matter heretofore impossible, because theory was interfered with by a bit of friction. There is no reason why the pressure of steam in the boiler, should not itself directly regulate the damper opening, by rod and lever connections. Mr. Poillon's packing causes so little friction that it has been found, on connecting a lever similar to that in the Poillon governor, with the damper, that a heavy pressure can be made uniformly and proportionately to close, or a light pressure to open, the draught door. Mr. Constable exhibits an inexpensive device of this kind which will keep the pressure in the boiler, when this has been once set by a weight on the lever, within four pounds of the same figure constantly.

"Can you tell me how old the devil is?" asked an irreverent fellow of a clergyman. "My friend, you must keep your own family record," was the reply.

[From the Mechanics' Fair Daily Press, Oct. 26th.]

The Times.

Everything seems to be dull and quiet at present. In financial circles the cry of hard times, and a "tight" money market continues to be heard, and the worst is that it is predicted there will be no change for the better until the first of the year, and possibly not until next spring, which means here, just after the rainy season. Our Literary Societies also seem to be in a rather quiescent condition. As a general rule the lectures, concerts etc., have been poorly attended, while even the Fair, although the chief object of attraction for some time past, has lost its interest for many who crowded it when first opened. The warm weather which we have had during the month past, has been succeeded by a colder atmosphere, while even as we write, the clouds threaten copious showers of rain. We have not been without some excitement however. The elections are over, and people have grown tired of reading the stirring appeals made to their patriotism in such forcible manner through the daily press. The Mercantile Library have been making great efforts to preserve their institution from being closed, and after the Fair is over, propose to use the building for the exhibition of holiday presents, charging a small entrance fee, and by other means endeavor to place their worthy institution on a safe financial basis. The Young Men's Christian Association are also endeavoring to raise five thousand dollars in order to cancel a floating debt, and place themselves upon a like paying basis. The Association is a most deserving one, and is the only *free* reading room on this coast. The amount is to be raised in $5 subscriptions, and we hope they will find no difficulty, even in these hard times, in raising the thousand needed subscribers.—*Social Voices.*

There will be a private exhibition of duck, geese, ganders, cormorants and doves near the fountain in the Pavilion, this evening, between 9 and 10 o'clock. It will require a close inspection to tell the ducks from the geese, as their plumage will be so much alike. The ganders will be easily recognized, so will the doves.

"Everything has its uses," said a philosophical professor to his class. "Of what use is the drunkard's red nose?" asked one of his pupils. "It's a lighthouse," answered the professor, "to warn us of the little water that passes underneath it, and reminds us of the shoals of appetite on which we might otherwise be wrecked."

An Honorable Family.—The Percy's are one of the oldest families in the British peerage. The most illustrious of the family, he who achieved the greatest distinction, was Percy Vere, and he who won the greatest infamy was Percy Cute.

There are more causual-ties in Chicago than in any other city in the Union. During the month of September last, one hundred and seventeen divorces were granted, and two hundred and seventy-six applied for.

The owners of an oil well in Pennsylvania have called it Olive Logan. Some of the lady's friends were irritated by the circumstance, because it was alleged that it bore the insinuation that she was a great bore.

A Devonshire matron, whose husband snores badly, keeps a clothes-peg underneath her pillow, and when his snoring awakes her, she adjusts the peg on his nasal organ, and then slumbers peacefully.

Dr. Cumming asks the Pope how it is that the Catholic priests are celibates while Peter was married. The Pope will probably answer that the custom has petered out.

Alex. Delmar, the quaint and curious perverter of statistics, has established a bureau in Washington for the manufacture of sensational treasury news, for Fiskal purposes.

The marriage is reported of a Mr. Rose to a Miss Violet. They will form a regular flower bed, and in due time that Rose will probably become a poppy.

An undertaker, having apartments to let, posted his bills upon the coffins in the window, announcing, "Lodgings for single gentlemen."

The hog may not be thoroughly posted in arithmetic, but when you come to a "square root" he is there.

[From the Mechanics' Fair Daily Press, Oct. 27.]

Dr. Rottanzi's Effervescent Drinking Cup.

On the counter of the Fair Press there has been placed on exhibition for a few days a very practical invention for the mixture and use of effervescent drinks, the inventor and patentee being Dr. Antoine Rottanzi of this city. Seidlitz powders, and all other effervescing substances of the kind, consist of a mixture of two powders, one of which is in the main a carbonate, and the other a harmless acid which attacks the former, liberating the sparkling carbonic acid that effervesces. Dr. Rottanzi's cup has a partition in the middle. One powder is placed in one side, and the other in the opposite; water is poured in on both, as much as the drink is to consist of. Neither powder sparkles until the mixture takes place. In this case the mixture occurs in the act of pouring out in a little spout on one rim of the cup. If the cup should be tipped back again, however, the residue would not be spoiled, but would remain in proper condition to be drunk at any time thereafter. For sea voyages especially, an article of this kind would be an agreeable and healthful companion.

Country Homesteads.—There are but few citizens in San Francisco that are blessed with money who will make better use of their coin than spending it for land in the country surrounding the bay. Of all the offers for sale of suburban property, we know of no one agency that affords so many favorable chances and advantages as that of Geo. E. Smith, Esq., San Leandro. He has been long in the business, has a large list of choice property for sale, and can give the purchaser easy terms in most instances. We should prefer to purchase of an established country agent of Mr. Smith's reputation, than of some loquacious city broker of less reliability. Mr. Smith has long been familiar with the titles and records of Alameda County, and has just been elected by its voters as County Clerk for the approaching term.

Suggestive.—Among the various goods exhibited at the Fair by the Capital Woolen Mills of Sacramento, are some mammoth blankets, nearly six yards wide, on which is a notice, "Made for Mormon Market." When a man has five or six wives and from thirty to forty children, as they do in Salt Lake City, he requires pretty wide blankets for the family bed. The Sacramento mill owners show great enterprise in preparing an article capable of covering such a multitude of sinners.

Dunbar's Self-Acting Steam Piston Packing has been used and patented for near a score of years. It is still being applied more extensively than any other self-operating packing. Henry S. Smith, of the Ætna Iron Works, is the general agent for the Pacific States. It is adapted to all classes of engines and locomotives and old and new cylinders.

Five years since we obtained a policy in the Connecticut Mutual Life Insurance Company, of Hartford, Conn., and if we were to increase our insurance we know of no safer, more economical, or better company to patronize. It is one of the oldest companies in America and probably the best in the world.

A Regular Cow-catcher.—During the recent flood in New England, an engineer discovered a cow swimming in the Hartford meadows, near the railroad track. He fastened a rope to her horns, making the other end fast to his locomotive, and towed the beast ashore. She proved to be a valuable cow, which had come down stream from the up-country somewhere, nobody knew from what State.

Yosemite Valley in its most glorious aspect is beautifully illustrated by Thomas Hill's famous picture, now exhibited at Snow & Roos' art gallery, corner of Kearny and Morton streets. All we have to say is, that if you have not seen it, lose no time in doing so, as it will leave the public gaze for the private gallery of Charles Crocker, Esq., the purchaser, within a few days.

Benevolence is not as attractive to the thoughtless as amusement. The Fair, since the receipts for entrance have been donated to the various benevolent societies of the city, is not frequented by the gay and festive youth of both sexes.

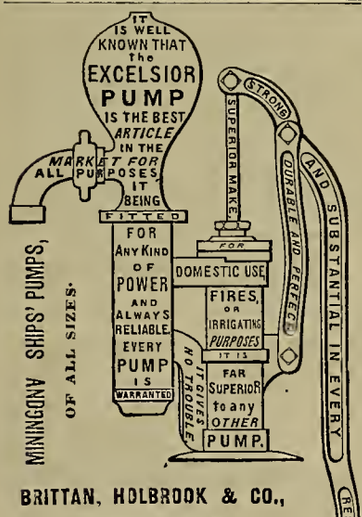
[From the Mechanics' Fair Daily Press, Oct. 28th.]

PIONEER IRON WORKS. — Kittridge & Leavitt, the proprietors of the Pioneer Iron Works, at Nos. 225 and 227 Beale street, have, within a few months past, greatly enlarged and improved their facilities for work, in the now location. They still continue to manufacture their improved steel-lined bank vaults and safes; also prison cells, fire-proof doors, wrought iron girders, etc., etc. They are now the proprietors and manufacturers of Bnssey's combination, burglar-proof bank and safe locks, a California invention, claimed to be the most perfect and effective bank lock in the world. Being operated without a key, no opening is presented, whereby the burglar can get a foothold upon which to commence his nefarious operations. After careful examination of its merits, by the aid of the most experienced experts, quite a number of our prominent banking houses have adopted this lock in preference to all others.

BRITTAN, HOLBROOK & Co.—This firm makes the finest exhibit in their line in the Fair. They exhibit stoves and cooking apparatus in great variety; also copper, tin, brass and tinned ware, and Japanese ware. These gentlemen are large importers and dealers in stoves, sheet iron, zinc, tin plates, wire, pipe, copper, pumps, etc. They make a specialty in their business of stoves and house-furnishing hardware, of which they always keep a large and varied assortment. Their place of business is at Nos. 111 and 113 California street, and Nos. 17 and 19 Davis street, to which we would refer all who may be in want of anything in their line.

BOILER MAKING in San Francisco is a large business, and rapidly increasing. Prominent among the few establishments which make this trade their special business, is McAffee, Spiers & Co., on Howard street, between Fremont and Beale. Although started recently, they are now doing a first-class and increasing business. We have long known Mr. Spiers as an intelligent mechanical engineer, and are pleased to note the success of the firm of which he is one of the leading members.

THE PACIFIC IRON WORKS, on First street, is one of the oldest and best regulated foundries in this city. Its range and capacity for work is hardly excelled on this coast. Its proprietors are men of experience and sound reputation, and the establishment is known for the general satisfaction given in the work turned out. Improved tools and good workmen can be relied upon at Goddard & Co's works.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Leffel, Bryson, Bodine and Chicago Turbine Water Wheels; Mill Stones and Bolting Cloths. All kinds of Cleaning Machines, including Smutters, Separators, Packers and Bran Dusters. Scales, Belting, Pecks, etc. Mill Irons and all kinds of Castings. P. O. Box, 274. CHICAGO, ILL. 11v19-3m

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July 11, 1869. ELAM & HOWES. [4v19-3m]

Office of California Powder Works,

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NOTICE.

On and after this date, and until further notice, the price of BLASTING POWDER will be two dollars and fifty cents ($2.50) per keg.

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MR BROWNE intends to devote the autumn and winter months to a personal examination of such properties as may be offered, and proposes to go East with them early in the spring.

His principal aim will be to encourage IMMIGRATION TO THE PACIFIC SLOPE, and to promote the investment of EASTERN CAPITAL in all legitimate enterprises that may be committed to his charge.

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THE *Mining and Scientific Press* should have an extensive circulation in every mining community on the Coast.—*Placer Herald, Dec.* 19.

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That I am prepared to teach all the above branches in less time than in any European School.

I also undertake to work any kind of ore, or mineral substances.

Special attention I would call to all parties who have the so-called rebellious ores, that I undertake the construction of any kind of Smelting, Chlorination, Amalgamating, Refining, or Manufacturing Works.

I refer not to single persons, but to all the works which I build in the States of Nevada and California, all of which are in successful operation.

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HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco. 21v18-1y

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[See following extract from the Globe of May 14, 1868.]

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Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London. 18v19-6m

California Steam Navigation

COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE

" CHRYSOPOLIS.....CAPT. A. FOSTER.

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Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE, President

13v12

Taxation of Undeveloped Mining Claims.

[Written for the Mining and Scientific Press.]

Editors Press:—Permit me to call your attention to a subject, the importance of which of which as affecting the mining interests of this county, and the desirableness of eliciting an expression of opinion from other counties similarly situated must be my apology if I seek to trespass somewhat unduly on your valuable space.

I refer to the taxation of undeveloped mining claims.

Equal and Unequal Assessment.

Up to last year the mines in this county were not assessed. In the fall of the year all the claims, whether developed or undeveloped, were made the subjects of assessment; on what principle the Assessor frankly admitted himself unable to explain; but, as it appears to me and many others, in a manner so arbitrary and unequal that some claims were valued at twice the amount of others of same extent, similarly situated, and on the same ledges, not perhaps intentionally, but simply because there was really no means of ascertaining their value.

An Appeal.

As manager of an English company operating here, it became my duty to appeal against the assessment to the Board of Supervisors, to whom I stated that, although I could not object to a fair assessment on improvements made by the company, the legality of which had been judicially established, I should be guilty of a dereliction of duty if I did not protest against the imposition of any assessment whatever on the *claims themselves* until their yield of bullion had given them a taxable value; that I had already passed one of the ledges they had assessed, which, notwithstanding the assurances of the vendors to the contrary, had proved no ledge at all, and that there was no guarantee that the other nine might prove equally valuable.

The Law about Undeveloped Claims.

In support of my position, I pointed out:

1st. That the statute book of California contained no authority for the imposition of a tax on undeveloped mining claims, and that all the legislation on the subject had been in quite an opposite direction. Endorsing the advice given them by the District Attorney, who was there in support of the tax—that the statute only was to be their guide, and that whether they exceeded or failed to exercise the power there given them, they equally failed in their duty—I called on them to act strictly on his ruling, and with me to consider the statute which gave them their powers as a Court of Appeal. The Revenue Act of 1854 expressly exempted mining claims; the repealing Act of May 17, 1861, by virtue of the provisions of which they sat there, the root and basis of all their powers (Sec. 4), exempted them; the Act of 1866 exempted them; then came the Act of March 30, 1867, which alone afforded them the least shadow of an excuse for the taxation of mining claims. Directing their attention to the fact that only Sections 4 and 13 of the exempting Act of 1867 were amended, and a clause to the effect that all *property* should be taxed substituted, reminded them that this was a tax on *owners*, not on occupants; that the property or fee simple of the mines is in the State; that until a patent was obtained that property remained in the State; all that the miner had being the tacit sanction of the State to dig for mineral. I quoted from Bancroft (p. 554) where it is laid down, "In the case of California, the Supreme Court held that the State is entitled to all the rights in mines of gold and silver enjoyed by the Crown under the common law (of England); that such mines belong to the State of California, and that the United States, in its ownership of the public lands, occupies the same position as a private proprietor, with the exception of an express exemption from taxation." I adduced the case of Jackson *vs.* The Feather River Company (14 Cal., 181), where the Court remarked that the right of the occupant to the *possession* of mineral land "was about all the claim he had to it." Yale, again, who has in his able treatise on the mining laws of California, committed himself to an opinion to the effect that, at the will of the Legislature, he sees no reason why mining claims should not be taxed, but which in my humble opinion the whole of his book goes to disprove. In commenting on the Mining Act of 1866, he says, p. 356: "This Section (Sec. 1) confers no title to mining claims other than possessory rights." "It is," he adds, "a mere license by Government to go on the public domain and search for minerals without charge. It may be revoked at any time by Congress by a simple repeal of the law, and the right would end."

Argument.

I appealed to them, therefore, how in the name of common sense, any man could maintain in the face of such a definition of the miners' title, that his was a property in the sense of an act which taxes owners only, not occupants. The fee could not be in two parties at the same time. The fee was in the State; the State could not be tried; the State permitted the miner to search for mineral on the State property, free of charge, and yet the Board would assume to themselves the power of levying a tax for State purposes, from a mere tenant at will, whose holding the State itself does not consider of such a nature as to be worth even a nominal rent; or, if it does, wisely abstains from enacting it.

Section 1 of the act above referred to (July, 1866), enacts, in no ambiguous language, "That the mineral land of the public domain," both surveyed and unsurveyed, are declared "to be *free*, and open to exploration," etc. They are not free if,—the moment exploration commences,—the County Assessor and the Board of Supervisors can assess them as they please.

I reminded them that the original act of 1861 was still in force, with the exception of the amended sections 4 and 13; that section 5 provided that all taxable property should be listed under one of two heads, real or personal, and that in the elaborate, and carefully drawn category of subjects under each of those heads, it was impossible to find one which could by any possibility be made to include mining claims. Had it been the intention of the Legislature to tax those claims, this section would have been amended, so as to include them. Standing as it does, they cannot be taxed, and as they can't be taxed, they can't be assessed. The instruction to the Assessor in the act, given in another section, are peremptory on this point.

The Intention.

Whatever, therefore, may have been the intention of the framers of the Act of 1867, they had failed in making it law that non-producing mining claims were to be taxed. But they had no such intention. Had it been their intention to acquire a revenue from claims of this description in a country where mining is the staple, and where previous legislation had wisely always carefully exempted the undeveloped mining claim, the Act would have been explicit and unequivocal,—the mining claim would have been mentioned in *ipsissimis verbis*.

The Board could not therefore put a construction on its terms which previous legislation forbade,—more especially when such a construction was oppressive to the miner, tended to interfere with the liberty of the people, and was an infringement of the time honored maxim, that "all tax-imposing statutes are to be interpreted *strictissimi juris*—a principle, which, when there is any doubt, gives the party aggrieved the benefit of the doubt.

And, even if they had such an intention, there existed in the Legislature no power to tax locations on the public land, as the *property* was not, as before stated, in the individual, and as the public land is expressly excluded from taxation by the terms of the *Act admitting the State to the Union*.

Precedents.

My second ground of appeal was, that up to the present date, there has been no judicial decision in this State to the effect that undeveloped claims were to be taxed; and I challenge the Board and the District Attorney to show me any such; stating that as my constituents wished me to pay everything just and lawful, I would pay cheerfully on the amount assessed without further trouble, if they could refer me to any such decision; but if not, they must excuse me if I demurred to paying what appeared to me, at least, to savor very much of an opposite character.

I was then referred to the case of People *vs.* Moore, 30 Cal. 645. Fortunately for me I happened to know that no such doctrine was there laid down, and having appealed to Yale, read from page 91, as follows: "In the case of People *vs.* Moore, the Supreme Court on appeal held that *the claim itself being exempt from taxation*, it would be absurd to suppose the Legislature intended by the same Act to levy a tax upon the price paid for it, or the money expended on it." (The price paid for the claims was $20,000, and Moore had expended some $500 in constructing a tunnel to work them); and further, on page 92: "The case of the People *vs.* Moore does not establish an exemption like this." (He was writing in Hart *vs.* Blum, where the question whether a flume connected with a mining claim was taxable under the Revenue Act was involved,—for, adds Yale, "that case decided that the claim itself was exempt."

The Claim and Issue.

On their own showing, therefor, I claimed for my company absolute exemption from any tax on their locations, except in so far as they had made substantial improvements in the shape of buildings, etc., etc.; but all I could obtain was a reduction of the assessment on the claims themselves from $1,500 to $750; on which, believing that the matter would be judicially decided before another year, I paid, rather than involve the company in an expensive litigation.

Practice Elsewhere.

But the mining claims are assessed again this year; and my object in writing, is to ascertain if possible, through your columns, what is the practice in other mining counties, and to elicit an expression of opinion on a subject of vital importance to the future of any district, where its all depends on the success of its mining enterprise.

The Policy.

In place of imposing burdens on those, who, in hopes of future gains, are sanguine enough to invest largely in exploring the country, a more prudent policy suggests itself. Impose no restrictions except such as are necessary to regulate the acquisition, holding and working of the ground,—already in existence in the shape of the miner's rules and customs peculiar to every district,—induce capital by every legitimate indulgence; afford it all facilities until your district proves that it has its *quid pro quo* to offer in the shape of bullion; tax the bullion, and there will be no complaint, owners will be only too willing to pay it. your excessive duty would be comparatively easy, and a legitimate source of revenue opened up to the county. But where there is no bullion, let there be no tax. Outside capital is exploring the country for you, and in doing so, the pockets and patience of the explorers are already sufficiently taxed in carrying on works in mining regions, where,—while labor and mining supplies are often necessarily dear,—the nature of the work calls for heavy expenditure, and the uncertainty of success is not a redeeming element! Time enough to tax the claim when it becomes a producing mine. Even the diamond has no value until cut. Until a pay ledge is cut, there is really no mine to tax. Yours, etc.,

Lewis Chalmers,
Manager Imperial Silver Quarries Co.
Bulliona, Alpine Co., Oct. 7th, 1869.

Receipts of the Fair.

Date.	Daily Receipts.	Total Receipts.
Saturday, Sept. 11	$ 9 50	$ 9 50
Monday, Sept. 13	722 50	732 00
Tuesday, Sept. 14 (open'g day)	6,131 00	6,863 00
Wednesday, Sept. 15	3,636 75	10,499 75
Thursday, Sept. 16	2,845 50	13,345 25
Friday, Sept. 17	2,493 75	15,839 00
Saturday, Sept. 18	3,850 25	19,689 25
Monday, Sept. 20	2,524 00	22,213 25
Tuesday, Sept. 21	2,040 00	24,253 25
Wednesday, Sept. 22	2,150 00	26,403 25
Thursday, Sept. 23	2,001 50	28,404 75
Friday, Sept. 24	1,460 00	29,864 75
Saturday, Sept. 25	2,215 75	32,020 50
Monday, Sept. 27	1,408 00	33,428 50
Tuesday, Sept. 28	1,377 00	34,805 50
Wednesday, Sept. 29	1,639 50	36,445 00
Thursday, Sept. 30	1,848 25	38,293 25
Friday, Oct. 1	1,860 00	40,153 25
Saturday, Oct. 2	1,510 75	41,664 00
Monday, Oct. 4	853 75	42,157 75
Tuesday, Oct. 5	728 00	43,245 75
Wednesday, Oct. 6	759 50	44,005 25
Thursday, Oct. 7	775 50	44,780 75
Friday, Oct. 8	702 00	45,482 75
Saturday, Oct. 9	1,114 00	46,596 75
Monday, Oct. 11	603 50	47,200 25
Tuesday, Oct. 12	499 75	47,700 00
Wednesday, Oct. 13	605 50	48,305 50
Thursday, Oct. 14	535 00	48,840 50
Friday, Oct. 15	525 00	49,365 50
Saturday, Oct. 16	970 50	50,136 00
Monday, Oct. 18	686 00	50,722 00
Tuesday, Oct. 19	207 25	60,929 25
Wednesday, Oct. 20	228 00	51,157 25
Thursday, Oct. 21	327 75	51,485 00
Friday, Oct. 22	504 50	51,989 50
Saturday, Oct. 23	$664 75	$52,654 25
Monday, Oct. 25	$512 75	$53,167 00
Tuesday, Oct. 26	$777 25	$53,944 25
Wednesday, Oct. 27	$508 75	$54,453 00
Thursday, Oct. 28	$636 25	$55,089 25

Continental Life Insurance Co., 302 Montgomery street, corner of Pine.

Latest Stock Prices Bid and Asked.

S. F. Stock and Exchange Board

Friday Evening, October 29, 1869.

Miscellaneous Stocks.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5 20s, 1862	99	—
Legal Tender Notes	76½	77
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & int	
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1880	100	—
San Francisco School Bonds, 10s, 1861	par & int.	
San Francisco City and Co. Sch'l Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1869	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	45	48
State Telegraph Co	25	—
Spring Valley Water Co	62	62¼
Gas Companies.		
San Francisco Gas Co	86	86½
Sacramento Gas Co	52	54
Railroads.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	70
Central Railroad	56	—
North Beach and Mission Railroad	67	68
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
Insurance Companies.		
Firemans' Fund Insurance Co	96	98
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	91	94
Home Mutual Insurance Co	19½	20
Occidental Insurance Co	85	90
People's Insurance Company	90	95
Banking Institutions.		
Pacific Bank	97½	100
The Bank of California	120	140
Mining Stocks—Washoe District.		
Alpha	14	14½
Baltimore American	—	—
Belcher	13½	14
Bullion, G. H.	—	10
Crown Point	12	12½
Cole (Va.)	—	—
Conndence	20	25
Consolidated Virginia	—	—
Chollar-Potosi	16½	17
Dancy	1	—
Exchequer	—	7
Empire Mill and Mining Co	15	16
Gould & Curry	77	—
Gold Hill Quartz	—	25
Hale & Norcross	137	138
Imperial	34	34½
Julia	—	—
Justice and Independent	—	—
Kentuck	165	170
Lady Bryan	8½	9
Americus	—	—
Occidental	13	13½
Ophir	13½	13¾
Overman	120	—
Segregated Belcher	—	6
Savage	46	46½
Sierra Nevada	14	—
Union	—	—
United States	—	—
Yellow Jacket	40	40½
Miscellaneous Mining Stocks.		
Amador (California)	280	285
Aurora, White Pine	8	10
Eureka, (California)	220	—
Golden Chariot (Idaho)	20	—
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling Ornit, Lee, Parker, Acton, Aitken Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18-3m

Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. Howland.

Mining and Scientific Press.

Established.....May, 1860

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The inventors of the Pacific Coast, of all others, should be careful to patronize only well known responsible agents.

COUGHS AND COLDS are often overlooked. A continuance for any length of time causes irritation of the Lungs or some chronic Throat Disease. "*Brown's Bronchial Troches*" are offered with the fullest confidence in their efficacy, giving almost invariably sure and immediate relief.

RETURNED.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat,**

Sudden Colds, Coughs, Etc.

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to imitate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

A Family Medicine.—The PAIN KILLER is a purely vegetable compound and while it is a most efficient remedy for pain, it is a perfectly safe medicine, even in the most unskillful hands For Summer Complaints, or any other form of bowel disease in children or adults, it is an almost certain cure, and has, without doubt, been more successful in curing the various kinds of Cholera than any other known remedy, or the most skillful physician. In India, Africa and China, where this dreadful disease is more or less prevalent, the Pain Killer is considered by the natives, as well as European residents in those climates, *a sure cure.*

We have long known the high character of the PAIN KILLER, and that it issued with great success and satisfaction in our best families. It is the favorite medicine of our missionaries in heathen lands, where they use it more than all else together for the diseases that abound in those warm climates. It should be kept in every house, in readiness for sudden attacks of sickness,—*Chr. Press.*

The Pain Killer is sold by all Druggists and dealers in Family Medicines.

PERRY DAVIS & SON, Proprietors, Providence, R. I.

REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, Cal., General Wholesale Agents

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.

THOMAS MGGNEY, President.

August 2, 1869. 6v19-tm

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A situation in a Quartz Mill to do Millwright and Carpenter work. Address, B. C. B., Fisherman's Bay, Sonoma County.

18v19-1m

WALTHAM WATCHES.

Let every one who wants a Watch, read this carefully.

Especially if in some remote out-of-the-way place.

Now that the railroad is open, we propose to give the residents of CALIFORNIA the opportunity of getting single genuine Waltham Watches at the

Lowest New York Wholesale Prices.

We sell more Waltham Watches than any other establishment in the country, either wholesale or retail; we send great numbers in every section of the country by Mail and Express, carefully packed, and in perfect running order. Our plan is this: You want a Watch, and see our advertisement; now, we want you first to write to us for our Descriptive and Illustrated Price List, we will send it, postpaid, by return mail. It explains all the different kinds, tells the weight and quality of the cases, with prices of each; you then make a selection of the kind you prefer, and send us your order. We will then send you the Watch by Express, with the bill to collect on delivery. We give instructions to the Express Company to allow you to open the package and examine the Watch; if it suits, you can pay, and take it: if not, you are under no obligation to receive it; and if it is taken, and afterwards does not prove satisfactory, we will exchange it, or

REFUND THE MONEY.

As an indication of the Prices, we will quote one Watch from our list The P. S. BARTLETT, *Lever Movement, with Extra Jewels, Chronometer Balance, Patent Pinion, Patent Dust Cap, and all the other late improvements, in a Solid Coin Silver Case,*

$28 in Greenbacks, or about $20 in Coin;

All the other kinds, both gold and silver, in the same proportion. Do not order a Watch till you have sent for a Price List, as it contains a great deal of information regarding these Watches that will enable you to make an intelligent selection. Don't forget, when you write, to state that you saw this advertisement in the MINING AND SCIENTIFIC PRESS, and you need not put in stamps for return postage. Address in full,

HOWARD & CO.,

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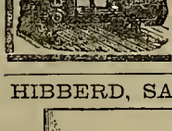

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It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted POSITIVE under all circumstances. Send for a circular.

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Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.

New Mining Advertisements.

Alleghany Consolidated Gold Mining Company, Location of Works: Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Tompkins	3	1500	$450 00
A L Whitney	32	185	55 50
Charles Adams, Trustee	12	1000	300 00
J N Thorne	13	125	37 50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 37, New Merchants' Exchange, on the fifteenth day of November, 1869, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. oc30

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty (50c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner Montgomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary.

Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner of Montgomery and Jackson streets, San Francisco

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees

A. CASELLI, Secretary.

Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Rippon Gold and Silver Mining Company,—Location of Works: Silver Mountain District, Alpine County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Isaac Lustig	6	5	$1 25
Wm Brown	11, 232, 234 277	70	17 50
Daniel Toy	30	50	12 50
J Silver	34	5	1 25
Isaac Marks	35	5	1 25
Jas S S Robinson	56	10	2 50
Matthew Davidson	79	12	3 00
Jas Allen	105	50	12 50
Mary Ann Toy	107	10	2 50
John Cosgrove	108	50	12 50
Mary Ann Roper	110	13	3 25
Mary E Roper	111	12	3 00
T C Riddell	112	10	2 50
Thos Magnire	115 149	50	12 50
Wm Cavigan	121 184	25	6 25
John Mason	122	10	2 50
Mary C Mason	123	10	2 50
H J Davis	127	10	2 50
Thos Graiglo	129 203	70	17 50
Lott Mulcahy	130 157	15	3 75
Thos Fay	132	10	2 50
David M Short	134	10	2 50
Chas Mayer	135	10	2 50
J Bonnaud	136, 161, 231 282	40	10 00
B C Levy	137	5	1 25
John Sanquet	138	15	3 75
Lazard Codchaux,	139, 160 2 9 240	25	6 25
C Palmer	148, 222 289	27	6 75
Thos Reynolds	151 292	35	8 75
Michael English	152	25	6 25
F Mahon	155	25	6 25
P unningham	156	5	1 25
Thos McCullough	159	10	2 50
Stephen McGillan	164, 166 230	20	5 00
P J McMahon	170 183	50	12 50
Elizabeth Curran	194 195	20	5 00
F H Moore	210	20	5 00
C B Gregory	211	20	5 00
J Mansstein	225	1	25
P M Wellin	242	10	2 50
Jas Lough	147 248	20	5 00
Annie E Stewart	249	20	5 00
M G Shovo	255, 257, 259 265, 261 262	90	22 50
John Hutchinson	268	1	25
B Curran	272 273	20	5 00
Henry Eno	278	25	6 25
S C Bidman	283, 284 285	25	6 25
C C N Little	290	20	5 00
M Heaphy	291	5	1 25
Geo Langridge	294 295	20	5 00

And in accordance with law, and an order of the Board of Trustees, made on the sixteenth day of September, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Saturday, the sixth day of November, 1869, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. F. BERNARD, Secretary pro tem.

Office, northeast corner Fifth and Howard streets, San Francisco, California. oc30

Mining Notices--Continued.

Bucklin Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteth day of September, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 40 Merchants' Exchange, California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the sixth day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the twenty-sixth day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. D'ELL STONE, Secretary.

Office, No. 40 Merchants' Exchange, California street, San Francisco. oc12

Glenwood Mill and Mining Company.—Location of Works: Greenwood, El Dorado County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of October, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the fifteenth (15th) day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the seventh (7th) day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

G. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. oc15

La Blanca Gold and Silver Mining Company.—Location of Works: San Antonio. District of Ures, State of Sonora, Mexico.

Notice is hereby given, that the Annual Meeting of Stockholders of the above named Company, will be held on Saturday, the 30th day of October, 1869, at 2 o'clock P. M at the office of the Company, No. 312 Front street, San Francisco, for the election of Trustees for the ensuing year, and such other business as may properly come before the meeting. By order of the President.

JOSEPH GOLDMAN, Secretary.

oc23

North America Consolidated Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of September, 1869, an assessment of two and one-half cents (2½c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN ARMSTRONG, JR., Secretary.

Office, 302 Montgomery street, San Francisco. oct2

Siempre Viva Silver Mining Company, District of Zaragoza, Sinaloa, Mexico.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the seventeenth day of September, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
R Bayerque	10	25	$37 50
J S Bacon	131	25	37 50
G Mahe	157	10	25 00
G Mahe	214	4	10 00
— Oesterlinck	164	20	30 00

And in accordance with law, and an order of the Board of Trustees, made on the seventeenth day of September, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction by J. Middleton & Son, at their salesroom, 310 Montgomery street, San Francisco, on Monday, the eighth day of November, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOHN F. LGHSE, Secretary.

Office, 314 California street, Up-stairs, San Francisco, California oc23

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixth day of September, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Mrs B Boll	8	60	$30 00
E G Bidleman	109	50	25 00
E G Bidleman	110	50	25 00
E G Bidleman	116	20	10 00
E G Bidleman	117	20	10 00
E G Bidleman	119	20	10 00
E G Bidleman	127	10	5 00
E G Bidleman	133	8	4 00
E G B dleman	135	100	50 00
E G Bidleman	136	100	50 00
E C Bidleman	139	100	50 00
E G Bidleman	140	20	10 00
E C Bidleman	141	27	13 50
E C Bidleman, Trustee	79	100	50 00
E C Bidleman, Trustee	81	50	25 00
P W Dillon	32	50	25 00
P W Dillon	33	50	25 00
P W Dillon	34	50	25 00
Wm Farrell	181	10	5 00
Jessie E Greene	1	15	7 50
Jessie E Greene	2	15	7 50
Michael Herlbey, Unissued		5	2 50
John Hamill	66	15	7 50
John Hamill	67	15	7 50
John Hamill	106	15	7 50
Peter McKewen	24	30	15 00
John McKewen	25	150	75 00
Miss Mary McMahon	29	15	7 50
John Murphy	62	150	75 00
John Murphy	121	30	15 00
Wm Neagle	61	393	196 50
Wm Neagle	88	5	2 50
Thos Newcomb, Trustee	47	100	50 00
Miss Mary J Neagle	85	30	15 00
Chas Ockel	Unissued	5	2 50
B F Page	19	15	7 50
B F Page	124	10	5 00
D Richards	146	20	10 00
D Richards	150	50	25 00
Harvey Strong	20	15	7 50
F Stohr	37	10	5 00
F Stohr	38	5	2 50
Michael Shell	Unissued	10	5 00
Bartholomew Wood	36	30	15 00
B Wager	126	25	12 50

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesroom of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, on Monday, the eighth day of November, 1869, at the hour of 11 o'clock A.M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. oc23

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment (No. 2) levied on the twenty-fifth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bisbon, T B	unissued	1000	$200 00
Coy, Frank	unissued	1000	200 00
Creighton, F	2 to 11 inc-ca 100	1000	200 00
Gibb, W T	1	1000	200 00
Gibb, W T	unissued	1000	200 00

And in accordance with law, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salerooms of John Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, Cal. on Monday, the twenty-fifth day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

SAM'L S. MURFEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. oc9

POSTPONEMENT.—The above sale is hereby postponed until Monday, the twenty-second day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc23 SAM'L S. MURFEY, Secretary.

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	8	268	bal 78 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	10	1258	bal 127 75
J H H Williams	69	979	bal 92 21
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10	bal 1 00
W H Kelm	43	5	1 50
Otis V Sawyer	45	20	6 00
Otis V Sawyer	46	20	6 00
R C B McDonough	48	100	bal 10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	59	630	bal 63 00
J D Littlefield	61	630	bal 63 00
George H Russell	64	600	bal 183 12
S M Smith	74	200	bal 20 00
Samuel D Meyer	75	50	15 00
George B Merrill, Trustee	63	681	189 30
Otis V Sawyer	71	1200	bal 112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

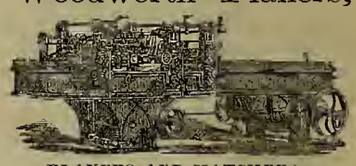
GEO. H RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. se25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc9 CEO. H. RUSSELL, Secretary.

Woodworth Planers,



PLANERS AND MATCHERS,

With patent expansion, feed gear and other improvements made at Worcester, Mass., in the most finished and substantial manner; also every description of Richardson, Merlam & Co's, Smith's and Wood's celebrated

Wood Working Machinery.

Embracing Mortising, Sash and Moulding, Smith's Stickers, Slat and Door Tenoning, Boring, Shaping, Scroll Sawing, Planing, Rod and Dowell making and Re-sawing Machines, Wood and Engine Lathes, etc., for sale at Eastern prices, at the Machinery Depot of

BERRY & PLACE,

112 and 114 California st., San Francisco.

☞ Agents for Blake's Patent Steam Pump, (warranted the best in the market); Davis & Furber's Woolen Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustrated Catalogues sent free.

SPECIAL NOTICE.

TO DEALERS AND CONSUMERS

—OF THE—

H & L AXLE GREASE.

Having received your liberal patronage and support during the last fifteen years, and desiring to further extend its consumption, and if possible meet the market of our Chicago friends, we have made a great reduction in prices, and from our long experience we will satisfy you that there is none BETTER, and through your liberal patronage that there is none CHEAPER.

HUCKS & LAMBERT,

144 Natoma Street.

Depot, 320 Jackson Street.

N. B.—We are prepared to furnish Bulk Packages to contractors on equally liberal terms.

MANUFACTURING

Room to Let.

We have a large room, about 18 by 86 feet, in second story at 414 Clay street, near Sansome, which we will rent very low, suitable for printing or manufacturing purposes

DEWEY & CO.,

Publishers Mining and Scientific Press, 414 Clay st

Machine for Forging Nuts.—A new machine patented by J. W. Brierly, Oldham, Eng., by the simple movement to and fro of a headstock upon a slide or bed, shapes, flattens, and cuts off the nuts from a heated bar, and delivers them sufficiently hot for the workmen to finish them with a few strokes of the hammer on a swage attached to the anvil.

The Extent of the Bogus Jewelry Business.—A New York jeweler gives his opinion that nine out of ten of the so-called sets of diamonds worn by fashionables are mere paste, not worth a shilling a peck.

Two million dollars' worth of silver are awaiting reduction in the White Pine District. Its proprietors would prefer a process of multiplication to one of substraction.

Government Gold.—There was $114,000,000 in gold in the Federal Treasury on the 20th inst., the largest amount that has been on hand at one time.

Chinamen make a profitable business of gathering wild mustard seed in San Juan Valley.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT.

UNION IRON WORKS,

CORNER FIRST AND MISSION STREETS,
SAN FRANCISCO.

MANUFACTURE

ALL KINDS OF MACHINERY

MARINE, LOCOMOTIVE,

And Stationary Engines,

Booker Patent Locomotive Stack,

ARMSTRONG PATENT

Heater, Condenser and Filter, Combined.

BOILERS, HIGH AND LOW PRESSURE,

Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Patton's, and Belding's Amalgamating Pans and Settlers; Heady's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Hendy, Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.

We would call particular attention to our

SCOTT & EOKART OUT-OFF ENGINE.

As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Offs at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:

"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 30-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate a change of load upon the engine *that the correct speed of the engine is maintained with* wonderful uniformity *under all circumstances.* This engine will work 50 or 60 horse power with ease and economy. Awarded silver medal. Wm. Burnett, Monty Fletcher, John Myers."

Pickering Governors, Machinists' Lathes,

Planers, Shapers, Drills, Etc.

On hand and for sale, Drawings furnished free of cost. Orders promptly attended to. A complete stock of fittings on hand.

☞ We are prepared to furnish all kinds of Machinery at short notice, as our facilities are unequalled on the Pacific Coast.

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AGENTS FOR THE

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—OF—

Patent Rights, Engines, Boilers,

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WE HAVE ON HAND IN GREAT VARIETY,

Engines and Boilers,	Malt Rolls,
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Pipe,	Lathes and Planers,
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Shafting,	Steam Gauges,
Pulleys,	Quicksilver,
Boxes,	Gas Stocks and Dies,
Mill Stones,	Belting,
Portable Mills,	Water-tanks, etc.,

Which we will sell at a discount of 25 to 75 per cent. on cost of new, in this city. Parties having any kind of machinery for sale, may meet with customers by consigning to us. Purchases made ou Comuission, and prices guaranteed as low or lower than parties can make themselves.

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No. 9 First street, San Francisco.
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FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

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GLASGOW

Iron and Metal Importing Company

Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE, Manage.

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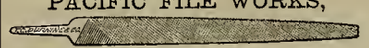

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Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.

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All kinds of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Brazes, Hinges, Ship and Steamboat Bells and Oongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

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IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

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CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

WILCOX'S PATENT WATER LIFTERS,

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PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

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Self-Adjusting Piston Packing,

Requires no springs or screws; is always steam tight; without excessive friction, and never gets slack or leaky.

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NEW GRINDER AND AMALGAMATOR

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AMALGAMATOR AND SEPARATOR,

Knox's Amalgamators,

WITH PALMER'S PATENT STEAM CHEST,

Superior for working either GOLD OR SILVER ORES, and is the only Amalgamator that has stood the test of seven years' continual working.

Genuine White Iron Stamp Shoes and Dies

Having been engaged for the past ten years in quartz mining, and being conversant with all the improvements, either in Mining or Milling, we are prepared to furnish, at the shortest notice, the most perfect machinery for reducing ores, or saving either gold or silver. 13v10qy-tf

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LIGHT AND HEAVY CASTINGS,

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Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in barrels. Black Lead, Coke and Soapstone ground to order.

☞ Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

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NEW FILES OF EVERY DESCRIPTION

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Old Files Re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19 qy

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AGENTS FOR

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Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

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CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders and Makers of all kinds of Machinery.

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CYCLOPS MACHINE WORKS,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

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Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

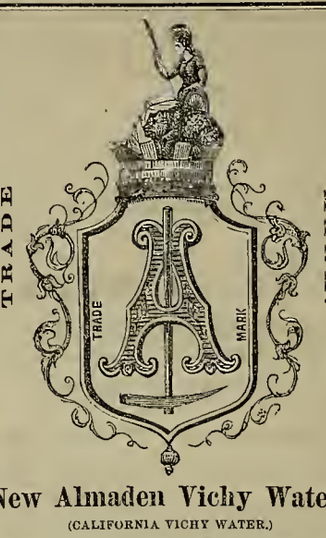
Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf



New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.

O. CHAUVIN.....Agent.

OFFICE, 500 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the vellous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness with the advice of a physician, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the physician only can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the Indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

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HAT MANUFACTURER

And dealer in

Hats and Caps

AT WHOLESALE AND RETAIL.

635 and 637 Commercial street.....San Francisco.
125 J street.....Sacramento.
Corner of D and Second streets.....Marysville.
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Our wholesale House, 635 Commercial street, extending through to 637 Clay street, San Francisco, contains always a most choice, and the largest, assortment in this State. Every Steamer brings the latest issued novelties from Europe and New York, which can be found at all the above stores, at moderate prices 23v16-3m

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Millmen are invited to examine these pans and settlers for themselves, at the office, **220** Fremont street,

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The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

—AND ALSO IN—

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19 3m

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BOILER MAKERS
AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

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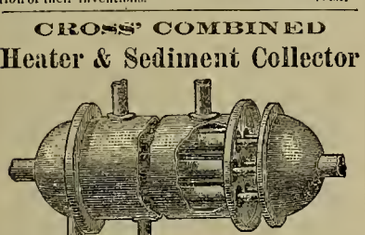
CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,
16v18-3m Patentee, Sacramento, Cal.

THE RISDON
Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

Corner of Beale and Howard Streets,
SAN FRANCISCO.

Steam Engine Builders, Roller Makers, Machinists, Foundrymen, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.

Directors:

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John N. Risdon.

JOHN N. RISDON.....President.
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LEWIS R. MEAD.....Secretary.
21v17-qy

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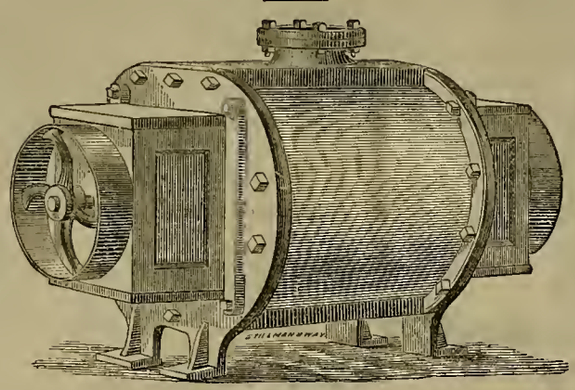
MANUFACTURED BY KEEP & BARGION,

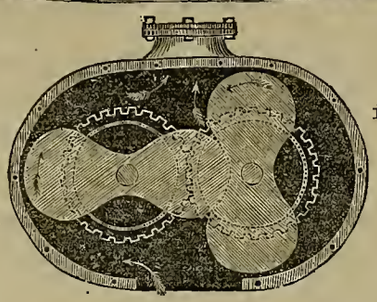
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER Than any Blower Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

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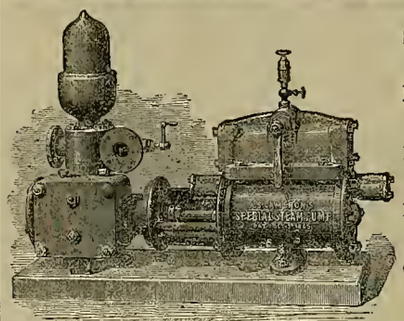
4v16 3m **Globe Iron Works, Stockton, Cal.**



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Engine Regulators.
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MARINE
ENGINES.
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Exchange drawn on New York in Gold or currency available at par in any part of the United States, and exchange furnished on Europe, India, China, etc., at lowest rates.

Collections and Disbursements made at all accessible points, and proceeds remitted without delay.

Interest allowed on Certificates of Deposit, Savings Accounts, Trust Funds, and on average daily balances of desirable check accounts.

Money to loan on U. S. Bonds, State, City and County Bonds, Local Stocks, Staple Merchandise, Real Estate and other good Securities.

The Company will act as correspondent for Banks and Bankers, and as agent in the transaction of all kinds of financial and trust business.

Bonds, Stocks, Papers, Jewelry, Silverware, etc., kept on special deposit in its large fire and burglar-proof vaults and safes, at moderate charges.

Trustees:

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Insurance Company,
OF SAN FRANCISCO.

Cash Capital, - - - - - - - $300,000

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Fire and Marine Insurance.

All Losses paid in U. S. Gold Coin.

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Orders from the interior faithfully attended to.

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[SPECIAL NOTICE.]

Winn's Patent Shampooing Apparatus.

By the use of the apparatus here shown, the unpleasant mode in which the operation of shampooing is usually performed, is converted into a neat and tidy process, very effective and decidedly agreeable. By the aid of this apparatus, the head is washed and scrubbed in a bath of water, of any desirable quantity or temperature, and the employment of which, upon the top of the head, is productive of the most delightfully agreeable sensations, such as impart an entirely new feature to the process of shampooing. The apparatus is tasteful as well as substantial in its construction; and its use is equally as effective when applied to the long, flowing hair, as worn by the ladies, as to the shorter hair of gentlemen's wear.

To form this apparatus, a rim or bottomless pan is first constructed, with a gutta percha lining so devised and provided with an elastic strap, as to fit tightly around the head, below the principal part of the hair. The drapery or curtain, which is seen to fall below the rim, is both for ornament and use; it serves to conceal from view the somewhat unsightly straps, lining, etc., which form the water-tight joint between

the head and apparatus thereto applied, and a subsequent elastic gutter, which is strapped tightly about the head, at the extreme lower part of the hair, to catch any water which may possibly escape from the main apparatus. As seen in the engraving, each has a flexible tube appended, by which the water may be carried off to a sink or other suitable receiving vessel, so that the person will have no occasion to leave his seat during the entire operation, or even to remove his neck-tie.

The soap-suds or any other shampooing fluid which may be employed, is poured upon the top of the head, within the rim, after it has been properly adjusted, and a brush or mop, or sponge, or any other suitable instrument, is then employed within the body of the liquid to clean the head and hair. The liquid is readily discharged through a stop-cock and the tube shown in the rear, and fresh water for rinsing applied, as often as may be desirable. Standards, with curved rests or supports, placed upon the shoulders, and adjusted by screws upon the top, all shown in the engraving, are affixed for the purpose of taking the weight of the apparatus and a portion of the weight of the water from the head. The flexible rim which adjusts the apparatus to the head makes this device practicable.

Previous to putting on the rim an elastic strap is placed around the head to hold up the hair intended to be included within the rim, when it may be properly washed and cleansed. This arrangement is particularly useful and indispensable in fact, in shampooing the head of a lady with flowing hair. This combined apparatus renders the process of shampooing as easily and as readily performed for a lady as for a gentleman. Mr. M.L. Winn, of this city, the inventor and patentee, exhibited his apparatus and the practical employment of the process, in the Mechanics' Fair, and will soon open a saloon in this city. The patent was obtained by the M. & S. PRESS PATENT AGENCY.

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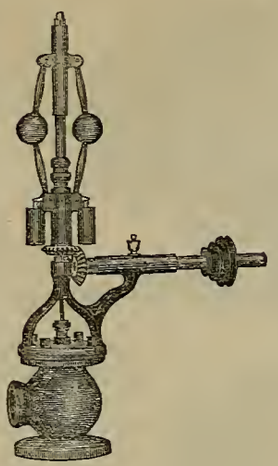

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I also take pleasure in informing the public that during my recent visit to the East I became SOLE AGENT for

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United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. Branch Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,
Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co.:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass. GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco. Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs. A. S. Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use since 1847, when in the New Orleans Mint. I have always preferred the Crucible of Dixon's make over Adus, Gaulier, and Taunton, Mass. Yours I find to be not alone of more fine-sized make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others, and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

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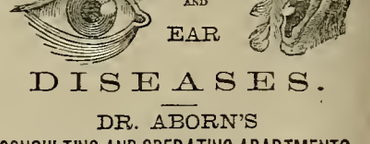

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MINING AND SCIENTIFIC PRESS.—This journal is devoted to mining and scientific researches, and has been conducted with great ability. It has been greatly enlarged and improved.—*San Jose Patriot.*

MINING AND SCIENTIFIC PRESS.

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, NOVEMBER 6, 1869. VOLUME XIX. Number 19.

Mechanics' Institute—Regular Meeting.

A regular monthly meeting of the Mechanics' Institute was held on Thursday evening, at the Institute hall on Post street. President Hallidie presented a report of the result of the late Fair, the substance of which will be found elsewhere in our columns. Owing to the small attendance, the lecture which had been announced by Mr. Burgess was postponed until the next meeting of the Institute, of which due notice will be given.

The President announced that the report on awards and diplomas was not yet complete—that which was read on the last evening of the Exhibition, and which was subsequently published in the daily papers, was neither full nor accurate. In fact, some of the committees have not, even at this present writing, handed in their reports. We shall give the official report in full in our next issue.

[We may here state, of our own knowledge, that the complaints which have been so freely uttered since the preliminary publication of the awards, have grown out of the imperfect and informal action of some of the committees, and the total lack of action on the part of others, and should not be held against the Managers of the Institute or the Exhibition. Those gentlemen are anxious that equal and impartial justice shall be done to all, and are determined, so far as their power and painstaking can affect such a result, to reach it.]

Mr. W. F. Herrick, who was sent East several months since, as General Agent of the Institute, submitted a preliminary report of his action and the observations made and information obtained with regard to the history and standing of most of the leading Mechanics' Institute organizations at the East. The report was both interesting and suggestive, and showed that the mechanics of San Francisco, in their energy and enterprise in this direction, stand ahead of those of any other city in the Union. We shall allude to this report again at some future time.

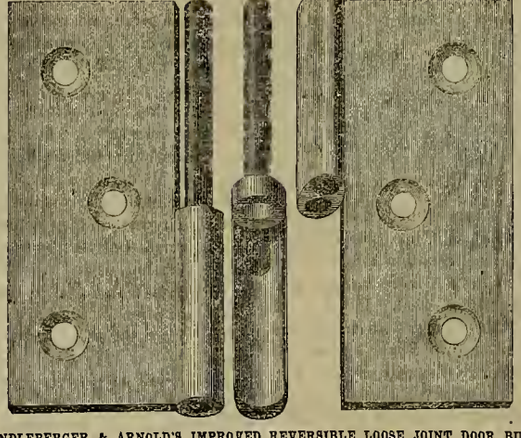
YALE COLLEGE COURANT.—This valuable journal, published at New Haven, Conn., has a new feature. It has commenced the publication of a series of biographical articles, to be illustrated. The subject of the first is C. W. Eliot, the new President of Harvard College. The series will be continued from week to week. New scientific apparatus will be illustrated from time to time; also, views of college buildings, and other cuts appropriate for such a publication. The *Courant* numbers among its contributors a large proportion of the college Presidents and Professors in the United States.

J. ROSS BROWNE will discourse on the Chinese Political Puzzle and the Tartar Court, at the Mercantile Library Hall, on Monday evening next. Some important and interesting developments with regard to the Chinese Mission may be expected.

Kindleberger & Arnold's Improved Reversible Loose Joint Door Butt.

This invention consists of an improved door butt, so constructed that it can be adjusted to open and close on either side—that is, so that it can be changed from a right to a left hand butt, as desired; and that by simply changing the position of the parts, the general symmetry of the butt is preserved, while its strength is increased, making it, it is claimed, much more durable than the ordinary door butt.

Referring to the accompanying engraving the left hand leaf is constructed similar to the leaves of ordinary door butts, having a cylindrical lug extending from one end to near the middle of the leaf, and a stationary pintle projecting upwards from the upper end of the lug. The opposite or right hand leaf is provided with a lug which



KINDLEBERGER & ARNOLD'S IMPROVED REVERSIBLE LOOSE JOINT DOOR BUTT.

is made in the form of an ellipse, extending downward to near the middle of the leaf. This lug is so attached that if the leaf were extended sideways, it would divide the ellipse, longitudinally, through its center. This ellipse is provided with two holes or sockets, one on each side of the ellipse, as distinctly shown, and extending the entire length of the lug.

As already stated, the two lugs do not meet in the middle of the butt; but a small space is left there, which is filled up by an elliptical washer, having a semi-circular projection upward which fits around the lug on the left hand leaf. When this washer and projection is fitted to the cylindrical lug aforesaid, that also assumes an elliptical form, corresponding in size and shape to the lug on the right hand leaf in engraving. This elliptical washer is provided with a hole on one side of the ellipse (the front in the engraving) also a pintle, extending upward, but a little shorter than the pintle connected with the cylindrical lug on the left hand leaf; so that by entering the pintle on the left hand leaf into the socket of the washer, and slipping the washer upon the cylindrical lug, a sufficient addition is made to that as to give it the same form of the other, as already stated.

This combination being effected, then by fitting the right hand leaf to the left so that its two holes or sockets will receive the two pintles, the butt is put together in working condition.

To change the butt so as to cause it to open in a direction contrary to that for which we have now supposed it to be set, or in other words, to change it from a left to a right hand butt, it is only necessary to remove the right hand leaf, and change the position of the pintles so that the short pintle will enter the hole in the lug upon the right hand leaf, from which the long one was removed, and the long pintle will enter that from which the short one was removed—thus completely changing it into a butt opening in an opposite direction. The screw holes on both leaves are countersunk on each side. Kindleberger & Arnold, the inventors, have assigned their title to the above invention to the "Inventors Association of San Francisco."

This invention was recently patented through the M. & S. PRESS Agency, and received a diploma at the late Mechanics' Institute Fair.

LABOR AND CAPITAL.—The daily production of the combined capital and labor of the country, is set down at $25,000,000; or $7,000,000,000 annually. With such a capital, and with resources such as are possessed by the United States, combined with the impressible energy and aspirations of our forty millions of people, who can predict the future of wealth and power which the American people must attain at the close of the next century, when our population will reach one hundred millions of souls!

GRADUATES OF TOLAND MEDICAL COLLEGE.—Following are the names of the graduates at the Toland Medical College on Wednesday: R. Caldwell, C. S. Haile, C. A. Toland, W. A. Cochrane, A. Weber, J. C. Clark and A. Younger.

More Electro-Metallurgy.

Dr. J. H. Rae, the Superintendent of the "Desulphurizing Electro Mining Co.," of Syracuse, N. Y., and Empire City, Colorado, writes to us that he is the discoverer and patentee of an electric or galvanic extracting process, dating September, 1866. He says:

My experiments were continued successfully, and on the 5th day of February, 1867, my first patent was issued for a new and improved method of recovering the precious metals by the application of electricity.

On the 12th of March, 1867, a second patent was issued to me for the recovery, by the same agency, of gold and silver, from filings, sweepings and earths, and for the use of linings or facings of baths, tubs or cylinders, as electrodes in the recovery of such metals by electricity or galvanism.

On the 13th of October, 1868, a third patent was issued to me for electrical amalgamators or cylinders lined with copper, with zinc arms upon the shafts, or zinc linings with copper arms, or any other metal capable of producing a galvanic current by the aid of appropriate chemicals.

These patents were made public, and I have since continued to expend my time and my resources in bringing the process to perfection, and putting the same into practical operation.

These patents will, as I conceive, be found to cover the application of electricity or magnetism, in any mode in which it has hitherto been or may hereafter be applied, for the purposes indicated.

I am now at this place, have taken a mill, my machinery is constructed, and within one week will be in operation.

I have already worked 700 pounds of refractory ore at a time, and accomplished results greater even than those of which you speak, and I cannot doubt that I shall be able to recover, substantially, all the gold or silver from the most refractory ores. From this place I shall proceed to California, and shall there put my process into full operation, and shall offer the advantages of a very simple and economical process to others. JULIO H. RAE.

The application of electricity to the reduction of ores is at least twenty-five years old—since Becquerel's experiments—and as there are many roads to Heaven according to the denominational philosophy, so there may be more than one method of accomplishing desired results in electro-metallurgy. If our correspondent has hit up another *right* road, California will exceedingly rejoice.

DRIED FRUIT.—An unusual amount of dried fruit has been prepared and sent abroad from El Dorado county this season. We trust the example will be followed in other localities. Drying fruit might and should be made a large and profitable business in this State. It is a shame and disgrace that so much fruit should be suffered to go to waste in a climate so well calculated for out-door drying as is here enjoyed. It tells heavily against our thrift and industry, unpleasant as may be the acknowledgement of the fact.

CORRESPONDENCE.—We have quite a mass of correspondence on hand, accumulated during the continuance of the Fair, to which we shall attend the coming week.

Farming and Gardening.

California Fruits at the East.

The Eastern papers still continue to notice the arrival at the East of California fruit, particularly pears and grapes. The Chicago *Tribune* of Octoher 26th, speaks warmly of the arrival of hoth of these fruits in excellent condition—more large and luscious than the Eastern fruits; as the fruits of the eastern side of the contineut hegin to fail in quantity and quality, those of the western come iu richer and in hetter order than early in the season. The *Tribune* thinks that California fruits will eventually hecome an important addition to the food of the people there, hy the low prices at which they will eventually be offered in that market. Such testimony is encouraging to California fruit growers, notwithstanding the failures of their first shipments. The experience of this year will be of great importance to future shippers, in teaching them how to pick and pack their fruits for railroad transit, as well as what variety of fruit to ship. The greater length of the California fruit season gives us great advantage for early and late shipments—holding up during the short run of the Eastern fruit seasou.

Our Grapes and Wines.

Rohert Buchanan, with several other gentlemen of Cincinnati, O., visited California this season, and was present at the State Agricultural Fair in Sacramento, and the Mechanics' Institute Exhibition in this city. On his return he read a paper before the Cincinnati Horticultural Society, in which the following paragraph occurred:

"We saw a single hunch of Victoria Muscat grapes which weighed eight pounds! But the great grape of California is the Mission grape, a foreign variety, introduced into California by the Spanish missionaries more than eighty years ago. As a wine grape, this holds among other California grapes the same place that Catawba held with us twenty years ago. Both a red and white wine is made from it. We observed this wine as it ran from the press, and the must was so rich in saccharine matter as to weigh as high as 115 per cent, while 85 was rare in the best Catawba, thus making the difference of 30 per ceut. hetween the wines. This admirable wine grape is sold at one cent a pound for those grown on the foothills of the valleys; those grown ou the level ground of the valleys only for three-fourths of a cent a pound.

The yield of wine is enormous. It is not uncommon to have 1,000 gallons to the acre. His friend, Mr. Werk, who was a better judge than himself, was enthusiastic on the matter, and regarded California as hound to hecome the great wine region, not only of America, but of the world. While there, Mr. W. pnrchased 10,000 gallons of the Mission grape wine, to be delivered the ensuing winter in New York.

To Prevent Hens from Setting.

When a hen shows a persistent desire to "set," it is an irresistihle impulse of her nature, which, for a time, it is impossible for her to resist; aud would be, even were she endowed with reason. Then how futile, how crnel to treat them to a twenty-four hour cold bath in three or four inches of water, or any of the score of other cruel torments to which they are often suhjected. Time alone will cure the impulse; hut if we would shorten that time, how much more rational, humane and effective to employ some means in accordance with nature, and the instinct which nature has provided. The *Rural Agriculturist* suggests a remedy, generally within ready reach, and in accordance with the above suggestion: "Put under the hen a few eggs just about ready to hatch; or put one or two young chickens under in the night time; take her off and put her in a box with the young chickens a few hours, and then take them away from her and turu her out, and in a majority of cases, she will, after clncking for a day or two, commence laying agaiu, feeling in her own mind well assured that she has fulfilled the maternal instinct."

The Plowing Season.

Now that the season of plowing has began, it will he well for farmers to look ahout them for information on this important portion of farm labor. The first thing to be attended to is to obtain the hest implements, and the next to obtain competent and practical men to do the work. Care should he taken that the work is done only when the ground is in proper condition. Land is often injured for years by being plowed when too wet. Better *miss* one entire crop than hurt the land in that way. The whole value of plowing depends entirely upon its having the effect of loosening up the soil so as to permit a free circnlation of air and moisture through it.

We know of no hetter chapter on the theory and practice of plowing than that which was given, with illustrations, in our issue of September 4. Farmers would do well to re-peruse that article at this time. However well land is manured, its utmost yield will never be rcalized unless it is thoroughly pulverized hy plowing and harrowing. It is only the impalpable powder of the soil, which is freed from the stones and lumps, that exerts any special influence on the production of crops.

The importauce of deep plowing is now pretty generally acknowledged; but now and then we still find some non-progressive individual who disbelieves in it. Such an individual recently found his way into a meeting of the Farmers' Club, which holds its regular weekly sessions at the Cooper Institute, New York City, who was noticed as follows by one of the reporters: "The Champion of Shallow Plowing exhibited corn roots which he had carefully washed out of the soil, to show that they had laid within two inches of the surface; and he asked the appointment of a committee to investigate this matter as to the relative depth the roots of plants ruu. An advocate of deep plowing responded that if the gentleman supposed that men advocated deep plowing for the purpose of inducing roots to go down he was mistaken. Roots only go dowu when the ground is plowed so shallow and the texture of the soil is such that they cannot get moisture and nutrition without. Deep plowing secures to the plants this condition at the surface. The committee was not appointed."

Profits of Flax Culture.—Mr. Peter Storm, of Watsonville, has raised 65 acres of flax the present season, which he thinks will average 2½ tons of fibre to the acre, and 1,800 pouuds of seed. He has contracted to sell the former to the San Francisco paper mills for $40 per ton, or $100 per acre. Other parties will pay him 4 cts. a pound for his seed, or $72 per acre; making a total of $172 per acre of yield. Making the most liheral allowanco for the greater cost of preparing and marketing this crop over that of wheat, it will be seen that flax raising, at present priccs, is much more profitable than wheat growing.

Farm Associations at the East.—The New Yorkers are getting up farm associations among the Germans in New York City. Farms of, say 25 acres each, are sold for $300, and are paid for in installments of $2 a week. The associations organized for the purposes of obtaining farms at low rates, consist of 50 members each, and purchase large tracts of 1,250 acres. Californians might profit by this example.

There is au orange tree in Los Angeles on one-half of which hang 6,500 ripe oranges, while the opposite branches are thickly covered with fresh blossoms which lade the air with their rich aroma. The usual time for orange trees to bloom, in that section, is in February, and Dame Nature seems, in this instance, to have forgotten herself.

Good Farming consists in prodncing as great quantities as possible of vegetables that do not exhaust the soil, and selling them in an animal rather than a vegetahle form.

Sheep.—Illinois spius and weavos the wool of 2,500,000 sheep. Consequeuce—her farmers are mostly out of debt.

Plowing Matches at Marysville.

The two rival gang-plow manufacturers of Marysville—Messrs. Hill & Knaugh and Mr. A. Ellison—have recently had several interesting and quite exciting plowing matches. At a trial on the 16th ult., according to the *Appeal*, high and dry and hard ground was selected. The Hill plow was drawn hy six and Ellison's hy four heavy horses. The audience was mainly composed of farmers and plow dealers. Some good plowing was done, aud the match was proving very interesting and exciting when an accideut happened to the Ellison plow, which struck an old road bed with snoh force that the iron holts in the heam were drawn over an iuch into the hard wood and the beam itself split.

In consequence of this accident the match was tried over again on the 23d ult. with the following result, as reported hy the *Appeal*: "Hill's plow did some good plowing, running an inch deeper than Ellison's. Ellison's plow was set for four or five inches, and ran very finely—throwing up the dirt as evenly as if it had heen harrowed over." The *Appeal* adds that these matches are exciting considerahle interest, hut result in no reliable and authentic expression of opinion; aud suggests that there should be an arrangement to plow a given piece of grouud in the presence of competent and impartial witnesses, who should make an official report of the same for the benefit of those who caunot attend to judge for themselves.

A Prolific Squash Vine.—A mammoth squash vine was raised by Mr. G. P. Sampson, in Doniphan County, Kansas, the past season, which branched into four vines, running in four opposite directions, ahout twenty-five feet each way, and covering ahont 2,500 square fcet of ground. The main vine, near the root, was ten inches in circumference, and the entire product was 150 squashes—forty-six of which averaged 22½ pounds each. This is probably the most remarkable growth of squashes ever noted. The writer of this once saw a pumpkin vine in the town of Medway, Mass., which somewhat exceeded the above in the diameter of its main stem; but which was of less extent of growth; and product—only three small pumpkins being matured upou it. It is rare that such efforts of nature, in the production of excessive growth in vine or stalk, yield much frnit. Such phenomena are modifications, not "sports" of nature; they are the result of the continued influences of surrounding circumstances, and always have a cause, but one which is usually hidden from human ohservation.

Oregon State Fair.—The late Oregon State Fair appears to have been quite a success. The show of horses, cattle, machinery and agricultnral products, is represented as all that could have heen expected; but the most interesting feature was the show of people. Not only were the people present in greater numbers, but the multitude made a more presentable appearance than on former occasions of the kind, and exhibited more evidences of thrift, enterprise aud general prosperity. The numher of visitors is set down as over 15,000. The numher of entries was about 3,000.

Orders for Ramie.—Numerous orders for the ramie fibre have been received from Europe hy Mr. Gregory, the well known ramie grower. Orders to the amount of twenty-one tons have been received, the heaviest coming from the lace mannfacturers of France.

Destruction of Orange Trees.—It is said that not less than 10,000 orange trees were destroyed iu Santa Barbara County hy the forest fires which were so unmerous in that part of the State just previous to the late rains.

"A Hardy Breed of Sheep."

[Written for the Mining and Scientific Press.]

Editors Press:—Uuder the above caption there appeared in your valuable paper of September 11th an article which interested me much, as I am inclined to helieve that it will elucidate a point which, to me, has long been a mystery.

The "Herdwick sheep," which is now deemed so valnahle in the mountainous Lake District of England, correspond in their qualities to those described in your journal as heing found only in the mountains of Navarre. From a knowledge of their possessing similar qualities to those described in the article named, I recommended them to the attention of residents of the Alpine districts of California, in my work puhlished in San Francisco, called "the Sheep-Breeder's Guido," uow almost out of print. After this little work was published, oue of our local newspapers, in reviewing it, specially called atteution to the part of the treatise ahove alluded to. By chance, the paper containing the criticism was forwarded to a relative, resident in the English Lake District, where it called forth copious remarks in several newspapers on the qualities of the Herdwicks and their adaptability for mountainous regions (of which property I propose commenting upon when the hurry of the Exhibition is over.) The origin of the Herdwicks has hitherto heen a mysterious point with me, which I believe is now likely to be cleared up hy the paragraph which appeared in your number of September 11th.

The tradition in the English Lake District is, that something more than a century ago, a vessel from Spain, on which were a large uumber of sheep, was wrecked on the southern coast of Cnmherland. Those which arrived on shore alive, having no one to look after them, took to the neighboring mountains, then solely tenanted by the "black-faced" breed. Their peculiar instincts attracted the attention of the neighboring shepherds, and about seventy-five or eighty years ago, a few commenced attempting to breed the pure race, their character in the interval having become much intermixed by crossing with the indigenous "hlack faces." One person, I know, has persevered in this matter for more than half a century prior to my leaving England, now more than fiftcen years ago; yet up to that time wholly satisfactory results had not heen ohtained, as progeny, "breeding hack," occasionally occurred.

A remarkable feature of the Herdwicks is, that *the pure breed possesses an additional rib*—fourtcen instead of thirteen. The mutton is the finest in Britain. If any correspondent would furnish your columns with information as to the numher of ribs, general appearance as regards color, horned or hornless, of the Navarre hreed, the write would feel greatly obliged.

Although Herdwicks are mentioned in one of the reports to the then English Board of Agriculture, at the closo of the last century, they did not gain general attention in recent years until the writer attracted the notice of the English general agricultural puhlic to the merits of their peculiar specialties, in a Prize Essay on "The Breeds of Sheep best adapted to different localities," which caused the Royal English Agricultural Society (according to a statement made to the writer by the late Mr. Pusey), to offer a premium for this special class, at the anuual exhihition held at Windsor during the "exhibition year" of 1851, and on some other occasiou, as the one held last month at Manchester, where it is reported some fiue specimens were shown and secured prizes.

Thomas Rowlandson.

San Francisco, Sept. 15th, 1869.

Artificial Drying of Corn.—Experiments were made in Illinois, last year, in drying corn hy hot air, and thereby getting it early to a market and obtaining the first price of that seasou. It is said the experiments have been repaid by a perfect success.

Sugar.—Our sugar bill is about $80,000,000 a year. Cuba gets most of that. When we make it from the sugar beet, Cuba will be beat.

Mechanical Progress.

Steel Fire-boxes for Locomotives.

It was thought at one time that the proper material for locomotive fire boxes had been found in copper. Iron had been found wanting; being quickly destroyed by the action of the fire and the corrosion of the sulphurous gases produced by the coal used. But copper has failed also. Half-inch sheets are in some cases found, after less than three years' service, to be reduced in thickness to one-eighth of an inch or even loss. The *Artisan* says that the Master Mechanics' Association which recently met at Pittsburg, Pa., listened to the report of a special committee on the use of steel for this purpose. In that report it was stated that on the Northwestern Railroad a locomotive has been run for eight years with a steel fire-box, which has thus far shown no signs of wear, although the coal and water had proved extremely detrimental to the copper and iron fire-boxes previously used. On the Pennsylvania Railroad are two locomotives which were fitted with steel furnaces in 1861, which still remain intact. About the same time, on the Baltimore and Ohio road, two locomotives were furnished in like manner, and with the same results—no leakage or other evidence of giving out being thus far manifest. The report concludes with the statement that "the committee decide emphatically in favor of homogeneous steel plates for locomotive fire-boxes, at least all those that burn bituminous coal; and that for boiler-plates for general construction, this material combines in a greater degree than any other the requisites of durability, safety and economy."

Bessemer Steel Rails.—The Rochester *Express* says that at one of the crossings of the N. Y. Central Railroad in that city, there are four rails which receive more wear than any other four on the road. They pass daily, by actual count, 486 engines and 3,262 cars. They have been down ten months, and are reduced only one-sixteenth of an inch. Mr. Booth, of Rochester, who has given especial attention to the matter, estimates one engine and tender equal to four cars in wear, which added to the 3,262 cars, equals 5,206 cars, or 20,824 wheels per diem, or 6,247,200 wheels for ten months. The greater portion of these cars are loaded, and much friction at this point is produced by the locking of the wheels and reversing and slipping of the drivers; at least the action is more severe than on the main track line with rapid movement, but with this ratio of wear, admitting it about equal, it will take twenty-six years for twenty daily trains, with twenty cars to a train, to reduce the steel from the first convex surface one-eighth of an inch.

The Albertype.—The London *Photographic News* thus describes the process: "A plate of glass is covered with a solution of albumen, gelatine, and bichromate of potash dried, and exposed to light until hardened. It is then again covered with a solution of gelatine and bichromate of potash, and when dry exposed under the negative, and the film is then found to possess qualities analogous to a drawing made with fatty ink upon lithograph stone. All those portions of the film that were acted upon by the light will refuse water and take printing ink, while those portions which were protected from light by the negative will take water and refuse ink. The ink and water will be absorbed by the film just in accordance with the gradations of light and shade in the negative. To produce a picture, wet the surface of the film, then apply ink, lay on paper and pass through a press; the operation being substantially the same as lithography. The process is said to be rapid, and excellent pictures of all sizes may be printed in admirable style."

Trueing Oil-Stones.—"For trueing an ordinary oil-stone for sharpening planes, take a sheet of glass paper No. 2, and lay it on the bench and rub your stone on it. In this way you can true the stone in one-quarter the time it would take in the ordinary way; and carpenters have always such means at hand. Five or ten minutes' rubbing will be found sufficient. Your glass paper will not be spoiled by the operation."

Coloring of Small Metallic Objects. M. Puschor makes a solution of 4 ozs. hyposulphite of soda in a pint and a half of water and adds a solution of 1 oz. acetate of lead in the same quantity of water. Articles to be colored are placed in the mixture, which is then gradually heated to boiling point. The effect of this solution is to give iron the effect of blue steel; zinc becomes bronze, and copper or brass becomes successively yellowish red, scarlet, deep blue, bluish white, and, finally, white, with a tinge of rose. This solution has no effect on lead or tin. By replacing the acetate of lead in the solution by sulphate of copper, brass becomes first of a fine rosy tint, then green, and, finally, of a iridescent brown color. Zinc does not color in this solution; it throws down a precipitate of brown sulphuret of copper, but if boiled in a solution containing both lead and copper, it becomes covered with a black adherent crust, which may be improved by a thin coating of wax. If the lead solution be thickened with a little gum tragacanth, and patterns be traced with it on brass, which is afterwards heated to 212 degrees, and then plunged into solution No. 1, a good effect is produced.

Bleaching Ivory.—Dr. Artus soaks the articles in a solution of carbonate of soda (half a pound of the crystals to two pounds of water) for a couple of days. They are then to be well rinsed with clean water, and transferred to a solution of three-quarters of a pound of sulphite of soda in two pounds of water, in which they must remain five or six hours. Then, without removing the ivory, a mixture of one ounce of hydrochloric acid and four ounces of water is to be added, the whole is to be stirred together, and the vessel covered up and left for thirty-six hours. At the end of this time, the solution is poured off and the ivory is to be well washed with water. So says the *Mechanics' Magazine.*

Longitudinal Sleepers for Railroads. The State Engineer of New York says in his report on railroads: "There is a growing conviction among engineers that the longitudinal system will become standard. It offers from two to three times as much bearing for the rail as the cross-sleeper system. The whole strength of the longitudinal sleeper is added to the strength of the rail, considered as a beam to carry the load. The strength of the cross sleeper in this direction is wholly wasted. The longitudinal is almost certain to prevent the displacement of a broken rail."

Iron Chimneys.—A wrought iron chimney has been recently erected at the Creusot Iron Works, 197 feet high, and 6 feet 7 inches diameter, increased at the bottom to 10 feet by a curved base, fastened by vertical bolts to masonry work. The thickness of the sheet-iron is 3-32-inch at the top, and 6-16-inch at the bottom. There is an inside iron ladder. The weight of this chimney is forty tons; it has been riveted horizontally, and lifted afterwards with a crane. Another one, 275 feet high, will soon be erected, but by a different system; it will be riveted vertically, with an inside scaffolding.

Steel Forging.—"In forging steel the secret is the temperature, and this must vary with the kind of steel required. Blistered and shear steel want more heat than cast steel; the greater the amount of carbon, the lower must be the heat at working. After cooling, the hammering should be very light, or internal fracture will be the result, not homogeneity. Let the blows fall in one direction; not at right angles to each other so as to destroy the grain. Burned steel may be brought round by heating hot and quenching in water repeatedly."—*Architect.*

Microscopic Photographs. — Pictures no larger than the eye of a small needle are now mounted in tubes resembling miniature opera glasses, and when viewed, appear of considerable size, being magnified by the glass on which they are taken. These pictures consist of portraits, landscapes, copies of documents, pictures, etc. They are intended to be worn on watch-guards, pins, rings, etc.

Another Explosive.—"The Lithofracteur" is the name of a new explosive material, invented by Mons. Krebs of Deutz, and recently the subject of experiments on a large scale at Cologne. The ingredients are kept secret. The advantages claimed are greater explosive power than nitro-glycerine, small production of smoke, and perfect safety,

Scientific Progress.

The Flaming Spark.

The *Chemical News* gives an abstract of a paper communicated to the Royal Society by Professor Popper, detailing some interesting experiments with the great induction coil,—from which we quote:

"The spark obtained from the large coil is thick and flame-like in its appearance, and will be alluded to as the 'flaming spark.' When the discharging point and circular plate are brought within six or seven inches of each other, the flaming nature of the spark becomes still more apparent. Two light yellow flames curving upwards appear to connect the opposite poles. * * *

The Dual Character of Electricity.

When the flaming spark is directed on to a glass plate upon which a little solution of lithium chloride is placed, the latter colors the flame upwards to the height of three or four inches in the most beautiful manner; and if the point of the discharge is tipped with paper, or sponge moistened with a little solution of sodium chloride, the two colors (the yellow from the salt, and the crimson from the lithium) meet each other, a neutral point being found about half way, and thus illustrating apparently the dual character of electricity, and that + passes to—electrical, and *vice versa.* * * *

Nitric Acid in Thunder Storms.

While passing through common air, if the flaming spark is blown against a sheet of damp litmus paper, the latter is rapidly changed red. In order to ascertain whether the acid product was nitric acid, the flaming spark (9 or 10 inches in length) was passed through a tube connected by a cork and bent tube with a bottle containing distilled water, from which another tube passed to the air pump; on drawing the air slowly over the spark, and passing the former into the bottle, nitric acid was obtained in large quantities, so much so that it could be detected by the smell and taste as well as by the ordinary tests. The popular notion that nitric acid is always produced during a thunder storm would therefore appear to be correct. * * *

The flaming spark has been ascribed by some experienced observers to the incandescence of the dust in the air, and especially sodium chloride. * * *

To ascertain whether the 'flaming spark' could be obtained with a small number of cells, the large Bunsen battery was reduced to three, and it was found that no appreciable spark could be produced. By reducing the length of the primary wire, and using the four divisions separately, with five cells the spark was wiry, and varied from 4¼ to 6½ inches; with 10 it was wiry, and varied from 8¼ to 9¾; in the latter the spark was slightly flaming. With 15 cells the spark was slightly flaming, and varied from 10 to 11¾ inches. With 20 cells a flaming spark varying from 11½ inches to 12½ inches was obtained."

Planetary Influence on Temperature.—Professor Pliny Earle Chase read a paper upon this subject before the American Association at Salem. An abstract of it is published in Prof. Wurtz's *Chemical Repertory.* Prof. C., who has been making observations for the Coast Survey upon the meteorological influences of the moon, found, in the forty-four years' record which has been kept at the Pennsylvania Hospital, ample evidence that rainfall and temperature were to some extent controlled by the lunar changes; and as, this being so, it was probable that Jupiter and some of the other planets would furnish corroborative indications, he arranged his observations successively in accordance with the positions of Jupiter, Venus, Neptune, and Mercury. The result, he says, was "the production of consistent curves, varying with the varying distances of the several planets, and with their positions relative to the sun. In comparing these curves an opposition was apparent between those of rainfall and temperature, which was more strongly marked than that which had been previously noticed in the lunar curves. It seems unreasonable to attribute the temperature-fluctuations to varying planetary radiation; but it is easy to understand that any influence which tends so to disturb the atmosphere, as to produce a northerly wind, should depress the temperature and increase precipitation, while one which tends to produce a south wind, increases both the temperature and the evaporation."

Period of the Sun's Rotation.

The spots on the sun are cooler than its brighter portions, and the center is warmer than the rim. The observations of Prof. Henry in this direction have been confirmed by other observers, and attempts have been made, by the study of such spots, to fix upon some meridional points in the sun's surface, by means of which its period of rotation may be determined. Prof. P. E. Chase sends the *Gas Light Journal* an abstract of his paper upon this subject, from which we quote:

"If the sun is a variable star, any permanent difference in superficial structure, however masked by the irregular disturbances to which the spots are usually attributed, may perhaps be accompanied by regularly recurring differences of temperature, which should be manifested by the thermometer. The seven years hourly thermometric observations at St. Helena (1840-7) were examined in various ways, in order to discover any traces they might furnish of cycles approximating to the supposed period of solar rotation. After testing, by the method of least squares, various assumed intervals between the limits of 25 and 29 days, the pointings were so decided and uniform, that all the observations were arranged in accordance with a hypothetical period of 27 1-14 days. The annual, semi-annual, and quarterly groupings, all confirmed the hypothesis that this was a normal interval. If we then assume 27 1-14 days for the synodical rotation of the sun, the time of its siderial rotation is about 25.065 days. This is somewhat greater than the estimates of Sporer and Carrington, but nearly accordant with the more recent estimate of Faye (25.07472)."

Great Telescopes Now Constructing. M. De La Rue is having a lens constructed of thirteen inches in diameter. Professor Henry Draper has very nearly completed a new silvered glass reflector of twenty-eight inches in diameter, the largest of the kind yet constructed, except one by Foucault. With this instrument the original negatives will be taken six inches in diameter, with provision for extending them to nine and a half inches if desirable. Professor Draper expects thus to obtain photographs of larger size than any that have yet been produced. There is now being erected at Melbourne, Australia, a powerful reflecting telescope four feet in diameter, of the Cassegrain form, which will be supplied with the necessary apparatus for photography, as well as for spectroscopic investigation.

The Nile to be Explored in Earnest. Sir Samuel Baker is to seek the sources of the Nile at the head of 1,700 men. The baggage, stores, and merchandise to be used in the trade with the natives, have already been sent on in advance. Engineers and shipwrights will accompany the expedition. Ten steamers and thirty sailing vessels will convey the expedition. Vessels will be built on the spot for the navigation of the lake Albert Nyanza. The expedition will rendezvous at Khartsum, at the confluence of the Blue and White Niles, and proceed along the latter as far as it is navigable.

The Sun Protuberances and the Sun-Spots.—Prof. Murray, one of the "Mattoon" observers of the late eclipse, after noting the fact that until the eclipse of 1868, (when for the first time the spectroscope was used to determine the point,) we were ignorant that the red protuberances, 70,000 miles in extent, were masses of incandescent hydrogen gas,—says: "That the spots which are seen on the surface of the sun will finally be proved to be identical with the protuberances I venture to predict."

Chlorate of Potassa as a Blow-pipe Test.—In the "*Neues Jahrbuch fur Pharmacie*" M. Landauer enumerates instances in which chlorate of potassa may be made useful before the blow-pipe. This salt gives up at higher temperatures some of its oxygen to certain metals, and at the same time becomes itself colored from the oxides of those metals. From *iron* and its compounds it receives a flesh color; from *lead* a pale brown; from *copper* a shade of light or dark blue, in some cases even as deep as to be nearly black. Manganese imparts a purple of variable intensity, and nickel (sesquioxide=$Ni^2 O^3$) turns it to black.

Railroad Progress.

During the continuance of the Mechanics' Institute Fair, we have found very little time or space to devote to the material progress of the State outside of the city. That pressure having now, however, been removed, we shall be able to again resume our regular routine. Since our last reference, the railroad builders on the Pacific Coast have been quite as active as at any previous time. We notice that the Pacific railroad, which for a while employed a temporary terminus,—already constructed—to Alameda, made its first landing of passengers at its permanent terminus in Oakland, on the 30th ult. The Los Angeles railway is completed. The Vallejo railroad extension is within five or six miles of Marysville. The California and Oregon road is pushing on northward from Marysville in the direction of Chico, which place it is expected to reach this winter. The first iron has also been laid on the Oregon end of the same, by the company which is to construct from the Columbia river to meet the Marysville road at the state line.

Railroads North of San Francisco.

In that portion of the State more immediately north of this city railroad enterprises are numerous, and the time is not far off when all the important agricultural valleys in that region will be placed in direct communication with this city and a market. The San Rafael and San Quentin company is making rapid progress. The residents in the Russian River valley are somewhat discouraged over the Sonoma railroad projects, which look to a continuation northward up the Russian River valley, and thence into Humboldt county. We see no reason for such doubts; it takes time and money to carry out such vast enterprises as are now in contemplation in that section of the State—and especially in a new and sparsely settled country is it necessary to "go slow," if disaster would be avoided. Sonoma will not be long without her system of railroads, an extension of which up the Russian River valley and above, will be a matter beyond the possibility of doubt.

Two Other Routes,

Connecting Suisun Bay with the northern counties between the projected Humboldt road, and the already existing Oregon route, are also in active contemplation; both of which will soon be absolutely required to meet the growing wants of farmers in those counties. Each of these must be quite or nearly independent in their business of the Vallejo and Marysville roads. The most eastern of these projected roads, which has already assumed a corporate existence, will start from a point on the Vallejo road at or near Woodland, and extend almost due north through the center of Yolo and the south-eastern portion of Colusa counties, to the town of Colusa on the Sacramento; and from thence, still north to Tehama and Red Bluffs, also on the Sacramento. At the latter point it may make a connection with the California and Oregon road from Marysville. This road will be a little over 100 miles in length, and will pass through a fine agricultural country throughout its entire length. It will also form a more direct route to Oregon than the detour by way of Marysville. The company which holds the franchise of the road is virtually the same as the Vallejo Co. Whatever may be the intent of the present incorporators, whether a bluff game to compel the Central folks to purchase the Vallejo, or whether they really mean to build, it is certain that the road *must* be built at some time—not far in the future. The success of the Vallejo road has fully proven that this northern branch, if such it may be called, must also prove a good paying investment.

The Suisun and Berryessa Road.

The second of the two roads above referred to is that known as the Suisun and Berryessa Railroad, which is an independent company, and actively at work—the first section of the road being already under contract. This road, when completed, will be 67 miles in length, and will tap a very extensive and wealthy section of agricultural country in the Berryessa and Clear Lake valleys, which is now virtually excluded from a market.

A movement is also on foot to connect Napa Valley with this road, through what is now known as Chiles' Cañon, which opens into Napa Valley at a point about ten miles above the town. The people throughout all the northern portion of the State are deeply interested in these enterprises, all of which are even now greatly needed, to open up that region to ready communication with this city and a market.

Railroads South of San Francisco.

The railroad movements to the south of this city are even more interesting and important than those to the north of us. We have already alluded to the new terminus of the Central Pacific and the completion of the Los Angeles road.

A Railroad to Santa Cruz.

The Santa Cruz people are moving actively for a railroad, and they need one. That county, though a small one, has a large, thrifty industry, and a vast amount of valuable pasture and arable land, to say nothing of its timber and fuel, all of which will soon be needed to supply this market. It is estimated that there are at least 100,000 acres of the best redwood timber in this county, yet untouched. Her forests also contain large quantities of oak and other woods. Her hills abound with inexhaustable quantities of lime. Her only market for all these productions is San Francisco. The county of Santa Cruz is second only to San Francisco in the extent and variety of her manufactures.

Three routes for reaching Santa Cruz by rail are proposed. The first to run southward from Redwood City, and after crossing the summit to descend the valley of the San Lorenzo. By this route, fifty miles of new road would have to built, nearly all the way through valuable timber. The highest elevation is about 2,000 feet, which can be reduced by a tunnel to 1,700. The second route proposed is thirty miles long, to run from Santa Clara, and across the Gabilan Ridge near the head of the Soquel Creek. The elevation could be reduced to 600 ft. by tunnelling. Soquel is the center of population of Santa Cruz county, and this route would probably accommodate the people generally better than any other. The distance from Santa Cruz to San Francisco by either of these routes is 80 miles. The third route is 30 miles long, starts from Gilroy, and makes the distance from Sa Francisco 110 miles. It is claimed that this road will bring the produce of Gilroy and northern Monterey to Santa Cruz, to be sent thence by schooners to San Francisco, in preference to going 80 miles by rail from Gilroy.

Stockton and Tulare.

It may now be regarded as a fixed fact that a railroad will be constructed from Stockton southward through the eastern portion of the San Joaquin Valley for at least 75 miles, without any unreasonable delay. Thirty-five miles of the road will be built within a year. Messrs. Stanford & Co., of the Central Co., are at the bottom of the affair, which is a sufficient guarantee of whatever may be promised in this direction. The city of Stockton aids the enterprise by the issuing of bonds to the extent of $300,000, and pays interest money that will probably amount to $24,000 annually for 20 years. This road will undoubtedly be continued to Visalia, a distance of about 85 miles further. Its construction will add vastly to the population and productiveness of the eastern portion of the San Joaquin Valley, and must add vastly to the value of all the land throughout the region which it traverses.

The southern mines will derive much benefit from the enterprise, as most or all of the travel and transportation of Tuolumne will save about 20 miles of stage road; Mariposa will save 50 miles; while the Fresno, Tulare, and Kern river travel will pass over the entire distance of the proposed railroad. This will be the cheapest piece of road for its length in the State, and cannot fail to prove a pecuniary success and a most important advantage to the rapidly growing city of Stockton. This road may and probably will eventually connect with the Northern Pacific; while another must soon be built, leaving the Stockton and San Francisco road just west of its crossing of the San Joaquin, and skirting along the eastern slope of the Coast Range to the point where the Southern Pacific will reach the Tulare Valley.

Sutro Tunnel.—Sutro has three shifts of men at work in his tunnel, and is going right along. A heading six feet square has been driven in 52½ feet, and Monday the work of cutting the tunnel to its full width will be commenced. As fast as it is finished, sets of timbers twelve inches square will be put in. The material in which they are now at work is a hard dry clay mixed with boulders. A car track was put down yesterday and cars put on.—*Enterprise, Oct. 31st.*

The "People's Tribune."

The prospectus of an "Occasional Review" under this name, has been received from Virginia City, published by Conrad Wiegand, as agent and trustee of the concern, which is to be supported "by a private non-sectarian and non-partisan association of men and women" of that burg. It proposes to give reviews of the ownership and management of the Comstock mines; to expose the "unrighteous rule of the rich" in perpetrating "robbery by legalized legerdemain;" and to give a series of biographical sketches of the public men now or heretofore prominent in connection with the history of the Comstock lode; viz: of Charles L. Strong, first Superintendent of the Gould & Curry; Woodward Palmer, of the Ophir; William Sharon, agent of Bank of California and President of the Union Mill and Mining Association; Charles Bonner, of the Yellow Jacket, Gould & Curry, and Savage; Joseph T. Goodman, publisher of the *Territorial (?) Enterprise;* Adolph Sutro, projector of a great drain and mining tunnel; William M. Stewart, United States Senator from Nevada; Thomas Fitch, Congressman from Nevada; H. G. Blasdel, Governor of Nevada; B. C. Whitman, a Judge of the Supreme Court of Nevada; C. C. Batterman, former Superintendent of Crown Point mine, and now State Treasurer of Nevada; A. W. Baldwin, United States District Judge for the District of Nevada; J. H. Latham, agent Wells, Fargo & Co., Virginia; Henry D. Lathrop, late Rector of St. John's Church, Gold Hill; Father Manogue, of the Roman Catholic Church in Virginia.

Revelations are promised touching the "marvelous conversion in a single day" of a vast multitude of brawny miners from open opposition to Chinese labor on the V. & T. R. R., by William Sharon. Contributions are invited on the litigation of the Comstock lode; on the Miners' Union of Virginia City, Gold Hill, Unionville and White Pine; the Sutro Tunnel, and on the question, "Can Comstock ores be worked to 80 per cent. by common pan process, and if yes, has Congress no right to require it?" etc.

The Last Night of the Fair.

The attendance on the last night was immense, larger than on any previous evening during the Fair. About nine o'clock, the Board of Managers proceeded to a raised platform prepared for their reception, when Mr. Hallidie, President of the Institute, opened the proceedings by the delivery of a short and pertinent speech, at the close of which he remarked as follows:

Our receipts have been, from all sources, about $61,500, and our expenses about $27,000, showing a gain on this Fair of $35,500. We carried over from last Fair a debt of $7,885, leaving us net gain for the two years of about $26,615, besides this edifice, costing in all about $45,000, and worth, if sold, about $9,000, which, if added to the $26,615, will make a total gain of $35,615 to the Society, enabling us to reduce its debt (mortgaged) about 50 per cent.; and with funds to invest in new books, chemical and philosophical apparatus, etc.

After this financial showing, Mr. Irving M. Scott, Esq., in behalf of the Board, presented the Institute gold medal to L. P. Benchley, Esq., representative of the Pacific Rolling Mill, in a few happy remarks, to which Mr. Benchley responded. Mr. Hallidie then proceeded to announce the awards, to which more particular reference is elsewhere made.

The Humboldt Register is again the title of a Nevada State journal. We have received the first number, and recognize the familiar heading; but this time it is published at Winnemucca, and by Robert McBeth and M. L. Bonnifield. Success to it.

The Daily Times has been purchased and merged with the *Alta California*. The *Times* sustained a good character during its life of some three years, and under its late management by Dr. Gunn its readers seemed to highly appreciate the paper.

Academy of Sciences.

The regular semi-monthly meeting of this Society was held on Monday evening, Prof. Blake in the chair.

Dr. Cooper reported the receipt of a large number of scientific works for the library, including exchanges and purchases by subscription. The library is steadily increasing in value, and has no equal on this coast for the specialty to which it is devoted.

Gregory Yale presented a semi-fossilized portion of a mastodon tusk from Alaska—found 400 miles in the interior. He also presented for the use of the Curators a powerful magnifying glass.

Dr. Kellogg exhibited and commented upon a number of interesting plants collected by him during a recent botanical excursion in the northern coast range, chiefly in Humboldt county. Among them was a very large and handsome species of primrose, the petals of a rich dark purple. It was originally found and determined by Prof. Bolander, Botanist to the Geological Survey, and named after Prof. J. D. Whitney. Another notable plant was a peculiar species of ceanothus, which had the flavor of birch, and, when browsed upon by cows who are very fond of it, increases the cream in their milk by 25 per cent. Dr. Kellogg stated that this quality in the Humboldt ceanothus is so well known that it gives a special value to pasture lands where it is known to abound; and he mentioned one instance that came to his knowledge of a dairyman selecting his land with reference to the abundance of this plant. Its habitat is all along the coast range, at least as far south as Santa Cruz.

Some conversation ensued relative to other species of the ceanothus, and the fact that the leaves of this family generally resemble tea in taste was referred to—a fact which has been discovered by the Chinese, who are known to make a sham tea from the ceanothus leaves collected on the peninsula of San Francisco. Dr. Gibbons mentioned that the plant from which the American colonists made a substitute for tea during the revolution was the *Ceanothus Americana.*

Mr. Yale called attention to the expected recurrence of meteoric showers, so called, during the present month, and described two meteors that he saw simultaneously a few nights since. He had seen the great shower of 1833.

A New Pavement.—The Fiske Concrete Pavement is the name of a new invention which is being tried and highly spoken of in New York,. If this pavement has the advantages claimed for it, it will probably be used in San Francisco, and fill the bill of our requirements. The process of laying it is thus described:

The pavement is first swept clean, and all dirt removed from the crevices. It then receives a coat of pine tar, after which a layer of coarse concrete, two and a half inches thick, composed of gravel tar and resin, is spread over the stone base and made smooth and level by means of a stone roller, weighing 4,500 pounds. Then comes another layer, two inches thick, of fine gravel concrete, which is rolled out in the same manner. The whole is covered with a thin coat of sand to fill up the interstices and render the surface compact. The heat of the sun causes the evaporation of all the alcoholic properties of the tar, and permits the composition to harden and become as solid as stone. A section of the pavement that has been laid two weeks is already as hard as stone and perfectly smooth. Several experiments were made to test the solidity of that portion which had been finished ten or twelve days. One of the workmen was directed to strike it with a thirty-six pound maul, repeated blows of which produced no effect, not so much as a slight indentation. The ordinary paving stone was shivered to atoms by one stroke of the same hammer.

English Iron and American Railroads.—The demand for English railway iron in the States still continues on a great scale. In August we sent to the United States 25,548 tons of this description of iron, against 23,250 tons in August 1868, and 12,890 tons in August 1867. The increase in the figures for August was not very material, but in the eight months ending August 31st, we sent to the United States 229,145 tons of railway iron, against 188,730 tons in the corresponding period of 1868, and 125,551 tons in the corresponding period of 1867.—*Colliery Guardian, Oct. 8.*

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, November 5, 1869.

Financial.

Considerable sensation has been created in financial circles by the telegraphic announcement that Secretary Boutwell meditated a grand *coup de finance* on the 1st of January next, by a sudden and violent resumption of specie payments. If such a move be predicated on the surplus coin contained in the Treasury, it will terminate in wide-spread disaster; but it is possible that sufficient funds for the purpose may be obtained from European capitalists anxious to invest for a long term in the best existing securities, and at a higher rate of interest than can ever be procurable in Europe. The credit of the United States Government is too solidly established to be shaken now by twaddling politicians who have heretofore been vocal in the cause of repudiation, either in whole or in part. The nation has spoken, and given those men their quietus, while the honorable and meritorious policy pursued by the American Government and the enunciations of Congress have entirely dispelled all doubts as to our ability and desire to pay every obligation in the most honorable manner. The convention of leading merchants and business men, gathered from all parts of the country, which lately met at Louisville, Ky., gave emphatic expression to their views on the question of finance. Although they did not advocate immediate resumption of specie payments—because the thing is clearly impracticable, if it is to be done on our own unaided resources, yet they did the next thing, in recommending the withdrawal and destruction of legal tender notes as fast as the net income of the Government will permit, and the substitution of free banks, whose notes shall be issued only as fast as the legal tenders are withdrawn from circulation. With free banks, whose issues shall be predicated on coin basis, supported by Government bonds, and the steady retirement of Government notes as fast as the net income of the country will permit an early return to the condition of things which prevailed before the war would be easy and safe. Every interest in the Union is suffering from the fluctuating and uncertain values of the thing called paper money, and every interest is anxiously looking for the development of some plan by which fixed values shall be attached to paper currency. With $300,000,000 in coin in the Treasury, the work could be done very soon, without causing the least financial distress. The holders of greenbacks would scarcely press their redemption, because they would then be worth their face, as they could be redeemed at any moment, and are more convenient than coin. In our opinion, it is not at all unlikely that the Secretary may have determined to rid the country of its financial nightmare by hiring the use of a couple hundred millions from European capitalists at a comparatively low rate of interest. It is plain that something definite must be done, but no decisive action can be taken until Congress assembles and adopts a well-considered policy. The mercantile, manufacturing and agricultural classes have all expressed their views, and the question has been discussed from almost every conceivable stand-point, throwing floods of light upon it, and instilling much sound and practical sense into the heads of our national legislators. Under any circumstances, the country should be prepared for so momentous a change, by specifying some date upon which it shall take place, and giving ample time for business men of all classes to make suitable arrangements.

Rates in bank are 1@1½ per cent. per month, and outside accommodations are obtainable at 1½@2½, according to the security. The savings and loan institutions are not letting their money out very freely, but the demand has also lessened. Some vagabond libellers, having had their little quantum of brains addled by the no less vagabond twaddle of George Francis Train, endeavored to create a vague impression that wide-spread financial distress threatened this community, and this mischievous rumor has been sent far and near. Among other entirely unfounded reports was one affecting the Bank of California. This institution has a gold, paid-up capital of $5,000,000, and has 174 stockholders, who are actually worth $40,000,000, each of whom is, by the laws of California, personally and individually liable for all obligations assumed by the Bank of California. It has earned a surplus of $1,500,000, which, with the original capital, makes a cash fund of $6,500,000. Its assets are above $12,000,000, and its interest collections amount to $90,000 per month. Of the $9,000,000 out on loans and discounts to merchants and other business men, at least $5,500,000 are collectable on call, while its indebtedness to depositors only amounts to $3,000,000. The falsity and malice of the reports so loosely spread are only equaled by their supreme folly.

The operations of our Branch Mint for October were as follows: Double eagles, $1,580,000; eagles, $129,300; half dollars, $60,000; total, $1,669,000. The gold deposits were 89,124 ounces; silver, 57,038 ounces, of which 27,813 ounces were in Japanese coin, sent here for re-coinage. The transactions for the past ten months, as compared with those for a like period in the preceding two years, are shown in the annexed table:

Ten months.	Coinage, Amount.	Gold Deposits, Ounces.
1867	$15,826,535	739,131
1868	12,348,000	699,658
1869	11,232,000	679,435

The City Treasury is in a plethoric condition. At the close of October, $1,147,876 were in that lock-up.

The real estate market is rather quiet. Those who own desirable properties are not disposed to part with them, nor is there much anxiety shown to purchase, except in special localities. The number of sales made in October was 876, involving $1,631,260. Mortgages were effected to the number of 179, representing $706,574, and there were 111 releases, to the aggregate value of $302,200.

City Stocks.

No sales of miscellaneous stocks were effected in the Board during the past week.—The usual monthly dividends of the various local incorporations are as follows: Spring Valley Water Company, ½ per cent., payable on the 10th; North Beach and Mission Railroad, ½ per cent., payable since the 1st; San Francisco Gas Company, ¾ per cent., payable since the 1st inst. Sacramento Gas Company, ½ per cent., payable at the office of Wells, Fargo & Co., since the 1st of November; Merchants' Mutual Marine Insurance Company, 1 per cent., payable on the 10th; Pacific Bank, 1 per cent., payable since the 1st inst.

Mining Share Market.

We report a very fair business in the Stock and Exchange Board since our last issue, prices having been quite well maintained. There is apparently a better feeling among outside dealers, who manifest a greater degree of confidence, as exhibited by their increased investments. Considerable sales of White Pine stocks were made within the past week, the amount per share of several companies being low, while one (the Original Hidden Treasure) has been well maintained. At the close, a general improvement is noticeable.

The sales in the San Francisco Stock and Exchange Board during the month of October for the past five years have been as follows:

October, 1865	$4,000,500	October, 1868	$10,519,442
October, 1866	1,375,117	October, 1869	3,543,535
October, 1867	5,170,942		

Joseph Tilden has been elected Caller of the Stock Board, at a salary of $100 per month.

CHOLLAR-POTOSI—sold to a large extent at an advance. During the week ending October 29th, 1063 tons of ore were mined, against 872 the previous week. While there is no increased production since our previous report, we note a slight improvement in the quality. The Blue Wing stope is reported to look promising. On the first instant they sent 110 tons of ore to three different mills for reduction.

OPHIR—was in the market to a considerable extent, selling at uniform rates. On the fourth instant a telegram came to hand, as follows: "Have got the water from the old mine; drift and shaft filling up rapidly." On the 2d instant the main drift had been extended a distance of 763 feet, and the south-west drift 198 feet. An assessment of $2 per share was levied on the 29th of October.

OULD & CURRY—shows a slight improvement under limited sales. For the week ending November 1st, 374 tons of ore were extracted, against 427 tons the previous week. No material change is noticeable in the general appearance of the upper mine. The drift running south from the seventh station has porphyry and clay and a slight flow of water. The north drift is in clear, hard porphyry. The El Dorado Tunnel, west of the Seneca Branch, is closed—27 feet having been cleared out since the 25th of October.

SIERRA NEVADA—was in good demand during the period under review. This mine is reported to exhibit considerable improvement. On the 2d inst., $7,132 in bullion was sent forward to the office in this city.—OVERMAN has been receiving a considerable amount of bullion lately. They extract about 100 tons of ore daily.—CONSOLIDATED VIRGINIA levied an assessment of $1 50 per share on the 3d inst.

HALE & NORCROSS—met with rather free sales at an advanced price. During the week ending October 30th, the upper mine yielded 250½, and the lower 796¾ tons of ore, making a total of 1,047¼ tons, against 1,259¼ tons produced the previous week. On the sixth level, they are now 70 feet north of the station with the north drift, and 46 feet south with the south drift. When the north drift is carried 20 feet farther, it will be directly underneath the winze now being sunk from the fifth level, and they can then develop 160 feet in length of vein by making three cross-cuts westward through the vein. The winze is now 18 feet in depth, and is being sunk in the porphyry east of the east clay wall, in order to avoid the water in the vein, which will be drained off so soon as the vein is cut in the level below.

EUREKA (Cal.)—From the report of this Company for the year ending September 30th, we learn that the bullion product amounted to $563,688, and the dividends disbursed to $264,000. The ore extracted was 21,526 tons, and the amount reduced, 20,588—showing an average yield of $27 80 per ton, and costing $9 65 to mine and mill. From October 1, 1865, to October 1, 1869—a period of four years—the bullion returns aggregated $2,152,389, and the dividends disbursed during the same time, $934,000.

In reference to White Pine claims, we take the following from the *News*, dated October 30th:

ORIGINAL HIDDEN TREASURE is taking out 20 and sending to mill 25 tons of ore daily. Very little assorting is required of the ore taken from the breasts in the south shaft, which are being vigorously pushed. The north shaft, sinking through high grade ore, will reach the tunnel level within three weeks; and the tunnel, now in 60 feet, with a full face of ore, will connect with the shaft in about five weeks. The suit pending between this company and the Ruthburn, for a matter of 200 feet of ground, has been set for hearing in the District Court, November 22d.—AURORA CONSOLIDATED is sending to mill 75 tons of ore per day, of which 55 tons are reduced daily by three mills, giving an average yield of $59 per ton. This company will be in condition to pay regular monthly dividends from $1 to $1 50 per share from the beginning of 1870, or $16,000 to $24,000 per month. The track and dump at the tunnel have been completed, and the southern portion of the mine is yielding handsomely. The north breast in the Earl shows a marked improvement in quality, and the immense body of ore developed in that part of the mine appears to be widening and deepening as it is followed into the hill.—NOONDAY is piling up a large quantity of good ore at the north shaft, which is taken from the south drift, 55-foot level.—MAMMOTH levied an assessment of twenty cents per share on the 28th of October.

DECREASE IN TELEGRAPH RATES.—The Western Union Telegraph Co. has made a most important reduction in their telegraph rates to various points on this coast and in the State of Nevada. The reductions are from 25 to 60 per cent. No change, we believe, is made in the overland rates; but we presume a reduction in that direction will also be made, if the home reductions should prove a financial advantage to the Company.

NOBODY said they would give sight to the blind; yet Muller's Brazilian Pebble Spectacles will certainly improve the seeing of any one who has any eyesight at all left. *

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Allegheny Cons., Sierra co., Sept. 24, 20c	Oct. 25	Nov. 15*
Bucklin, White Pine, Sept. 30, 5c	Nov. 10	Nov. 30*
Belcher, Storey co., Oct. 21, $2 50	Nov. 22	Dec. 11
California Slate, Oct. 15, $1	Nov. 15	Nov. 27
Cap., Virginia, Storey co., Oct. 1, $1 50	Nov. 4	Nov. 20
Coney, Amador co., Oct. 11, $5	Nov. 20	Dec. 13
Crown Point, Storey co., Oct. 15, $7 50	Nov. 20	Dec. 10.
Can. Chloride Flat, W. P., Sept. 16, $1	Nov. 1	Nov. 11.
California S. M., White Pine, Oct. 19, $1 50	Nov. 22	Dec. 13.
Chicago and Detroit, Sept. 16, 50c	Dec. 4	Dec. 22
California, White Pine, Oct. 19, $1 50	Nov. 22	Dec. 13.
Dancy, Lyon co., Nev., Oct. 13, $1	Nov. 15	Dec. 4.
Empire M. & M. Co., Sept. 29, $25	Nov. 4	Nov. 24
Evening Star Cons., W. P., Oct. 19, $1	Dec. 1	Dec. 20.
Chloride Flat Cons., W. P., Sept. 16, $1	Oct. 20	Nov. 11
Geo. Washington, White Pine, Sept. 14, 10c	Oct. 18	Nov. 6
Hearst, White Pine, Sept. 15, 50c	Nov. 1	Nov. 22
Hope Gravel, Nevada co., Sept. 20, $1	Oct. 25	Nov 15
Imperial, Storey co., Sept. 15, $10	Oct. 19	Nov. 9
India, Virginia Dist., Oct. 15, 50c	Nov. 18	Dec. 6.
La Bianca, Mexico, Nov. 5, $1	Dec. 4	Dec. 22*
Maxwell, Amador co., Sept. 22, $1	Nov. 1	Nov. 21
Metropolitan, White Pine, Sept. 11, $2 50	Oct. 15	Nov. 8
Morning Star, Alpine co., Nov. 1, $1	Nov. 25	Dec. 13
Meadow Valley, Lincoln co., Oct. 9, 25c	Nov. 11	Nov. 30.
Manchester, Alpine co., July 16, 5c	Dec. 4	Dec. 22*
Mammoth, White Pine, Oct. 28, 20c	Dec. 7	Dec. 28
North Bloomfield, Nevada co., Sept. 20, $5	Oct. 22	Nov. 8
Noonday, White Pine, Oct. 11, 30c	Nov. 15	Dec. 9
North American Cons., W. P., Sept. 27, 2½c	Nov. 1	Nov. 22*
Ophir, Storey co., Oct. 29, $2	Dec. 2	Dec. 21
Oneida, Amador co., Oct. 5, $10	Nov. 10	Nov. 30
Pine, White Pine, Aug. 26	Sale Nov. 11	
Rippon, Alpine co., Sept. 16, 25c	Oct. 20	Nov. 15*
Rathburn, White Pine, Oct. 26, 50c	Dec. 1	Dec. 22.
Siempre Viva, Mexico, Sept. 17, $1 50	Oct. 21	Nov. 8*
Seminary, Storey co., Nov. Sept. 6, 50c	Oct. 18	Nov. 8
San Joaquin & K. R. C. Co., Oct. 6, 10c	Nov. 8	Nov. 23
Segregated Belcher, Storey co., Oct. 22, $1	Nov. 23	Dec. 11.
Taylor, El Dorado co., Aug. 25, 20c	Oct. 4	Nov. 22.*
Thunderbolt, White Pine, Sept. 14, 5c	Oct. 18	Nov. 6
Tecumseh, Calaveras co., $5	Oct. 17	Dec. 8
U. S. Grant, Nevada co., Sept. 21, 50c	Oct. 22	Nov. 13*
White Pine Mutual, Sept. 29, 50c	Nov. 3	Nov. 22
Wells, White Pine, Aug. 30, 30c	Sept. 17	Nov. 15*
Wheeler, Esmeralda co., Sept. 20, $1	Oct. 19	Nov. 20

MEETINGS TO BE HELD.

Sacramento and Meredith	Annual Meeting, Nov. 13.
Confidence, Storey co.	Annual Meeting, Nov. 12.

LATEST DIVIDEND.

Amador Co., div. $6 per share	Payable October 7, 1869
Alpha Cons., Storey co., Nev., div. $2	Pay. June 19, 1868
Bacon, Storey co., Nev., div. $1	Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent.	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12 1868
Chollar Potosi, div., $1	Payable October 8, 1869
Eureka, div. $7 50	Payable October 8, 1869
Empire M. & M., Nev., dividend 1855	Payable May 15, 1857
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Golden Chariot, Idaho, div. $3	Payable June 15, 1868
Golden Rule, Tuolumne co, div. 50c	$ sh. Pay. Oct. 26, 1869
Hale & Norcross, div. $26	Payable July 20, 1869
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $4	Payable July 1, 1869
Keystone, Sierra co., div., $32	Payable May 6, 1869
Kentuck, div., $20 per share	Payable Jan. 10, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Unassessable, div.	Payable June 18, 1868
Sand Spring Salt, dividend $3	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec. 19, 1868
Savage, Virginia, Nev., dividend, $4	Payable May 11, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct 10, 1869
Virginia & G. H. Water Co., Dividend, payable April 16, 1869	
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, November 5, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1865, '67, '68	$ —	—
United States Bonds, 5 20s, 1864	—	—
United States Bonds, 5-20s, 1862	—	—
Legal Tender Notes	70¾	—
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par & Int	
San Francisco City Bonds, 7s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par & Int.	
San Francisco City and Co. School Bds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co.	—	45½
State Telegraph Co.	25	—
Spring Valley Water Co.	62	62¼
GAS COMPANIES.		
San Francisco Gas Co	86¼	87
Sacramento Gas Co.	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	70
Central Railroad	56	—
North Beach and Mission Railroad	67	68
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co.	96	98
Pacific Insurance Co.	107	110
Merchants' Mutual Marine Insurance Co.	500	520
California Insurance Co.	—	150
Union Insurance Co.	91	94
Home Mutual Insurance Co.	19½	20
Occidental Insurance Co.	85	90
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	120	140
MINING STOCKS—WASHOE DISTRICT.		
Alpha	17½	18
Baltimore American	—	—
Belcher	14	14½
Bullion, G. H.	—	10
Crown Point	14	14½
Dale (Va.)	—	—
Confidence	25	30
Consolidated Virginia	—	—
Chollar-Potosi	18½	19
Dancy	10	11
Exchequer	—	—
Empire Mill and Mining Co.	—	40
Gould & Curry	—	80
Gold Hill Quartz	25	30
Hale & Norcross	150	151
Imperial	—	45
Julia	35	40
Justice and Independent	2½	3
Kentuck	168	170
Lady Bryan	7	7½
American	—	—
Occidental	10	11
Ophir	14½	15
Overman	102	103
Segregated Belcher	6	6¼
Savage	58	59
Sierra Nevada	14¾	15
Union	—	—
United States	—	—
Yellow Jacket	48	48¼
MISCELLANEOUS MINING STOCKS.		
Amador (California)	290	300
Aurora, White Pine	8	10
Eureka, (California)	230	—
Golden Chariot (Idaho)	15	20
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocoillo, White Pine	—	—

San Francisco Market Rates.

Wholesale Prices.

[FRIDAY, November 5, 1869.

Flour, Extra, ₱ bbl	$6 00	@	$5 50
Do. Superfine	4 25	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 15	@	1 60
Oats, ₱ 100 lbs	1 10	@	1 35
Barley, ₱ 100 lbs	90	@	1 15
Beans, ₱ 100 lbs	2 50	@	3 50
Potatoes, ₱ 100 lbs	75	@	1 25
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot	5	@	6
Hogs, dressed, ₱ lb	9	@	10
GROCERIES, ETC.			
Sugar, crushed, ₱ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18½	@	19
Do. Rio	18½	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Cooh Butter, ₱ lb	60	@	70
Isthmus Butter, ₱ lb	30	@	42½
Cheese, California, ₱ lb	15	@	19
Eggs, ₱ dozen	60	@	65
Lard, ₱ lb	17	@	18
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12
Retail Prices.			
Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	40	@	50
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	40	@	50
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	70	@	75
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	—	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	5
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	100
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	25	@	30
Soap, Palc and C. O	—	@	12
Soap, Castile, ₱ lb	—	@	20

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

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Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Improving.—*Miner*, Oct. 23d: The ore in No. 3 tunnel of the M. C. M. Co. is improving steadily and constantly, both in quantity and quality. Several tons of pay ore has been taken out this week, which shows unmistakably that this is upon the true south continuation of the Tarshish ore deposit. The Tarshish, in length and breadth, as well as in richness, in our opinion exceeds the Comstock.

Billy Rogers Claim.—*Chronicle*, 23d: The 10-stamp mill at White Rock, El Dorado county, has been purchased by Supt. Barnee of the Billy Rogers claim, in Hope Valley, but will not be erected until next spring. They have a mammoth ledge of paying ore. The successful working of the Billy Rogers claim will give an impetus to mining in the Hope Valley District.

CALAVERAS COUNTY.

Rich Rock.—*Chronicle*, Oct. 30th: Rock of extraordinary richness has been discovered in the Palomo mine. We are informed that $150 worth of gold was extracted from about as much rock as would fill an ordinary nail keg, and that there is a large body in sight of equal richness. The shafts have attained the depth of 250 feet, and are being sunk as rapidly as possible. At the same time a large force is engaged in stoping, keeping the battery of 16 stamps crushing day and night. The last clean-up left a handsome surplus over expenses.

EL DORADO COUNTY.

Quartz Mining.—Placerville *Democrat*, 30th: About a year ago, Dan. Miller discovered a quartz ledge on Mound Spring Creek, 3½ miles southwest from this city. Mr. Miller and two of his sons have been sinking a shaft, which furnishes indications of one of the most valuable gold-bearing veins ever discovered in this county. The vein has an average width of two feet, and every particle of the rock seems to contain gold, and as far as tested will yield from $25 to $100 per ton. The rock is soft and easily crushed.

LOS ANGELES COUNTY.

Soledad.—Correspondence of the *Alta:* "The Eureka is the pride of the district. It is a well-defined ledge, and averages $20 per ton in the mill. A year ago, Polk & McClellan, who owned the Deyeman & Saratoga, put up a 10-stamp mill, and Searles & Yates, a mill with five stamps, both of which were run by water. About this time Clark & Gleason, the owners of the Eureka and Amazonia, parted with a portion of their mines with Jas. A. Hayward and others, upon certain conditions. At this time the Mexicans had sunk a shaft on the Eureka mine 60 feet, and were taking out picked rock which averaged $47 per ton. Hayward & Co. at once suspended the Mexican job, and sunk a shaft 175 ft., and run a level 120 feet, the rock—good, bad and indifferent—yielding an average of $20 per ton. Last spring a combination took place, in which all of the interests in mills, mines and property, were merged in the names of Hayward, Polk, Clark and several others, who styled themselves the Eureka Mining Company, and erected a splendid steam stamp mill. They have a shaft down nearly 200 ft. At the end of the 100-foot level, a few days ago, a ledge was developed nearly six feet in width, showing fine specimens of rich quartz. This company own their hoarding houses, teams, and all the paraphernalia of a mining camp, valued, outside of the mines, at $75,000. The Zepata mine, of Dr. Winston, in the San Fernando Mountains, has in spots ore which will assay $400.

MONO COUNTY.

Struck It.—Carson *Appeal*, Oct. 26th: Senator Nye and Dr. Munckton have returned from a visit to the Dunderberg mine, on the East Fork of Walker river, owned by the Doctor. He has for a year or more been running a tunnel to the ledge. While he and the Senator were there, a blast of giant powder revealed the long-sought lode; and some specimens which were shown to us are the best evidence that the Doctor has been amply rewarded for his outlay. The ledge, which is very wide, has been found at a point some 250 feet below the croppings.

NEVADA COUNTY.

The Mines.—Grass Valley *Union*, Oct. 28th: We hear good reports from almost all the mines in this district. The Empire Co., on Ophir Hill, has a large ledge, and the rock shows well in free gold and heavy sulphurets. The Allison Ranch mine never looked better. The ledge shows well in rich rock. Ore is being crushed from the old ledge. The Pittsburg mine is paying considerable over expenses. The North Star had a clean-up last week, and we learn that it was largely over all expenses of the company since their reconstruction. There are hopes that the Coe and the Betsy mines will start up early in the spring.

Empire.—Same of 31st: Splendid rock is coming out of the eighth and ninth levels. In the shaft which is being sunk for the tenth level, the ledge is large, and carries free gold and heavy sulphurets. In the Rush & Laton ground, the incline is down 360 feet and two levels have been run, both showing good rock. The next month will set all things right.

Eureka.—"For the year ending Sept. 30th, the Eureka produced $572,600 from 20,638 tons of quartz—an average of $27.80 per ton, and the net profit per month about $30,000. The chloriuation establishment belonging to the mine reduced 137 tons of sulphurets, and obtained $23,532.52, or $171 per ton."—*Alta.*

The Ben. Franklin.—*National*, 27th: From a crushing of 51 loads of rock made at the Sebastopol mill in Boston Ravine, a few days ago, over $2,100 was realized. The rock was taken from the top level, 30 feet from the surface. The ledge varies from 6 inches to 4 feet in thickness.

Large Nugget.—Same of 29th: Mr. Wells found a nugget on the south fork of Steep Hollow, a few days ago, weighing 17 ounces. It is worth about $300.

North Star.—Same of 30th: W. H. Austin, from French Lead, informs us that the new 16-inch pump will be in position and ready for work by the middle of next week.

Hydraulic Mining.—*Transcript*, 28th: The prospect is that there will be a great deal of hydraulic mining in this county as soon as there is water. One company was formed a few months since, and 1,700 feet of ground was taken up on the Blue Tent road, which has never been worked before. A prospect of 50 cents to the pan was obtained from the claims. They have everything ready to work to good advantage. If this Co. is successful, we shall hear of lively times. There is ground enough in that vicinity to last for years.

Specimens.—28th: We were shown yesterday some most beautiful specimens, mostly gold, from the diggings of Shively & Co., Moore's Flat. The largest piece was valued at $30, and the others ranging from $1 to $10.

Mining Location.—31st: The New Bavaria Co. have taken up 1,000 feet on a quartz ledge one mile from Rush creek. The Co. sunk down 12 feet, and struck a splendid ledge one foot thick. The rock is rich in sulphurets, and shows some free gold.

PLUMAS COUNTY.

Big Clean Up.—Quincy *National*, Oct. 23d: We are informed that the last clean up at the Crescent mine in Indian Valley, for ten days' run, yielded over $6,000.

SAN BERNARDINO COUNTY.

The New Mines.—Cor. San Diego *Union*, Oct. 27th: There is nothing talked of in San Bernardino, except the placer diggings lately discovered 30 miles northwest from this place, and 15 miles beyond the Lytle Creek mines. There are a good many parties out prospecting. These mines are doubtless rich, but whether they are extensive is not yet known. I know one company that has been making $20 per day to the hand.

SIERRA COUNTY.

Will Start.—*Messenger*, Oct. 30th: Ned Leonard has his quartz mill nearly ready for running, the water having been let on the wheel Monday. He has about 200 tons of rock out, and will commence crushing this week.

Mohawk Valley.—Cor. of Truckee *Tribune*, Oct. 30th: "The company owning the iron mine at this point have started work as though they meant it, building smelting furnaces, and other necessary buildings. The gold and silver mines are being prospected with very flattering results, the gold mines yielding from $5 to $12 per day, coarse lead gold."

SISKIYOU COUNTY.

Old Placers Re-Discovered.—Yreka *Union*, Oct. 23d: In the mountains, 20 miles south of Adin, Big Valley, they have discovered a creek, the bed of which has been mined for two or three miles, at some former period. Curiously enough, there is a man now in Big Valley, but recently from Wisconsin, who says he worked on that creek in the spring of 1853, and took from it six pints of gold dust. In the vicinity is the quartz ledge of which we spoke two or three weeks ago. Dr. Ream has shown us a piece of quartz from it which abounds with gold.

TRINITY COUNTY.

Lower Trinity.—Trav. cor. of the *Journal*, 30th: Near "Don Juan's Point," Mr. Pelletreau has a number of Chinese employed in opening a claim which had every indication of paying. There are a great number of bars along this part of the river and some water privileges lying idle. The nature of the country is such, however, that very little ditch could be dug. Fluming would have to be resorted to, and lumber is hard to get. At Taylor's Flat, and on Corral Bar, opposite, some mining is being done. There is a good ditch from French Creek to the former place. From this point to Cox's Bar is eight miles. Here there is more mining being done than on all the rest of the river below North Fork, and the claims have a high name.

Weaver Creek Flume.—During the week the company finished putting in boxes for the season, and are now building dams to secure the flume from injury by the winter freshets.

TUOLUMNE COUNTY.

Mining.—Sonora *Democrat*, 30th: We are satisfied that much larger quantities of gold are being taken out in this county than is made known to the public. It has been stated to us that more than $10,000 has been taken out of one vein within half a mile of the city line within the last three months, but it has been kept secret by the parties. The miners of Brown's Flat are doing well, several claims are paying rich, but we are not able to get the amount taken out. Munn's claim, on the Tuolumne River, which was filled during the late storm, has been freed from water, and is now yielding largely. Knox & Boyle's mill was cleaned up last Saturday, and yielded $1,465. The Confidence mill was also cleaned up after two weeks' run on Saturday, and turned out $5,000.

Arizona.

From Big Bug.—Prescott *Miner*, Oct. 16th: Messrs. Gray, Jones and Wunderlich got back on the 14th, from Big Bug with the best kind of mining news. Mr. Heslep had run through and cleaned up five tons of refuse ore from the Independence mine, which yielded twenty-two dollars and fifty cents per ton, in free gold. Taking the yield per ton, of the first-class ore which was worked in an arastra a short time ago, by T. W. Boggs, and adding it to the result obtained by Mr. Heslep, we have an average yield of thirty-six dollars per ton. The company are taking ore from two lodes, and have about seventy-five tons out, which they feel confident will pay from $20 to $30 per ton. Some twenty men are at work at the mill in the mines. New roads have been laid out, lumber to build houses for the workmen has been ordered, and it looks to us as though the company meant business. Mr. Heslep has made many improvements on the mill, and we predict that the enterprise will be a success. We thank God for at last sending us a millman that knows how to save free gold!

The Prospecting Parties.—A part of the Miller party returned here this week. The remainder stopped behind, at Bill Williams' mountain, to hunt and prospect. We have not seen Mr. Miller, the leader, but learn that he went down the Little Colorado about 150 miles below, and saw no evidences of gold. When last heard from the Jackson party was at Hat mountain, 160 miles southeast of Prescott, and had not found diggings.

Colorado.

Ward District.—Central City *Register*, Oct. 14th: The Ni Wot, Long's Peak and Edgehill mills are all at work steadily. The percussion tables are doing their work well. The concentrated ore assays from three to six ounces per ton, and a large quantity has accumulated.

Krom's Concentrator.—Mr. Bela S. Buell sent 183¼ lbs. of common mill ore, from the Briggs mine, to be crushed and concentrated by Krom's Dry Concentrator. The Manager reports 32 lbs. of concentrated ore, 33¼ lbs. of dust not separated, and 118 lbs. of gangue. The samples sent are perfectly clean, and the dust not separated appears much richer in mineral than the original ore. Those who have witnessed the operation, say that the machine is a success. The crushed ore is at first screened, making three sizes, then each size is worked by itself.

Rising Sun.—Same of 21st: Mr. McCaskill reports that he and his associates have eight feet of pay rock.

Mills.—Mr. Jones has put up his steam stamp mill at the Manhattan and has it running nicely, each stamp making 150 drops per minute.....We understand that the Black Hawk Co. are taking out one section of twenty stamps, with the intention of putting in 25 lighter stamps in their place....The Franklin Company's new mill will be in running order in a few days.

Smith & Parmelee.—*Herald*, 20th: The strike is ended. From fifty to one hundred men are employed. Within the past few days nearly all of those who had refused to work, came back and offered their services. Some of them were re-engaged, but oftener their places were filled with new men.

Nevada.—The Sullivan Mill will resume work on ore from the Quartz Hill, on the Burroughs lode. The twelve stamps of this mill have been all Summer pounding away ou ore for this company. Chatfield is running his mill on Kent Co. ore.

Items.—Logan and Finley will start up the Holdbrook mill, North Clear Creek, on Monday, on Nevada ore. The University mill is being run by George Wells on ore from the Burroughs lode. A week ago Messrs. Holmes & Daws leased the Hurd mill, and have since kept its 30 stamps employed crushing rock from the Bates & Baxter claim, with good returns. In Chase Gulch, Tomlinson is running the old Holman mill (12 stamps) with Kip and Buell ore. J. V. Kimber keeps 25 stamps at work for Stalker & Standley. He shut down the Empire mill yesterday. Mr. Stevens is crushing Bob Tail ore, from the Sterling claim, at the old Gaty mill, and obtains a yield of from 5 to 20 ounces per cord.

New Reduction Works.—It is rumored that Stuart is about to organize a company for the purpose of building reduction works of twenty tons capacity per day, to be located in Georgetown.

Items.—Georgetown *Miner*, 21st: Mr. Symington is sinking on the vein in the Baltimore. We learn that the ore improves in depth....The Equator is yielding a large quantity of second class ore that is producing more silver than any previously....At the Marshall tunnel they have been testing single hand drills and Giant powder, the results being satisfactory....A day or two since we saw a fine bar of silver bullion, weighing 1500.2 ounces, .795 fine, coin value $1,542.06. It was from Equator ore. ....We are informed by Fred Clark that he has obtained the enormous yield of $30,964.44, per ton of 2,000 pounds, from a selected specimen of black sulphuret ore from the Terrible mine....Jacob Snider is sending Snowdrift ore to Bateman's chlorodizing works, at Mill City....Recent assays from crushed and sampled ore from the drift in the Brown mine, gave an average assay of over 400 ounces of silver to the ton. From present indications this company will ship not less than a thousand pounds of silver bullion next month.... On Monday, work was commenced on a cross-cut to tap the Grand Trunk lode, on Brune Mountain, at a depth of fifty feet. The ore from this vein shows, by assay, a yield of from 65 to 806 ounces of silver to the ton.

St. Joe.—This vein, on Sherman Mountain, 1,800 feet above the valley, excels in massiveness of outcrop all other veins in the Territory. Shaft, 23 feet deep; pay vein at that depth, 14 inches.

Tom Thumb Lode.—Crevice 8 feet wide. Discovery shaft, 20 feet deep. It yielded 1,000 pounds of ore which sold for $389 in currency. This work has all been done in 14 days. Select specimens of ore assayed from $1,200 to $3,000 per ton.

The Par Lode.—A sufficient amount of work has been done on the lode to warrant the belief that the Par is a true fissure vein, carrying a strong deposit of very rich ore. A number of test runs have been made, which show that the first-class ore is worth $1,000, coin value, per ton of 2,000 pounds. We are creditably informed that the average ore, by fire assay, is $669-.72 per ton. Three assays of selected ore, made respectively by Professors Martine, Hoyt and Brown, yielded $2,211.51, $2,-412.08 and $2,359.50, coin value, per ton.

Idaho.

Ida Elmore.—*Avalanche*, October 23d: Through the politeness of Mr. Caldwell Wright, Clerk of the Co., we are furnished figures, showing the number of tons of ore crushed, and the average per ton, from the opening of the mine up to Aug. 1st—the date of incorporation: Tons of ore worked, 7,020; gross product, $740,865.05; average per ton, $105.53¾.

Rich Ore.—A large body of extraordinarily rich ore has been struck in the Golden Chariot.

The Keystone ledge on Long Gulch, recently discovered by Sayres & Firebaugh, is reported turning out well.

Poorman.—*Wave*, 28th: The mine, at a depth of 50 feet below the 400-foot level,

where a drift is run six feet each way from the shaft, shows better evidence of permanence than ever. They find a good sound ledge with perfect casings, and proof that the ledge has changed its dip from west to east, indicating that by some convulsion a break has occurred at that point.

NORTH IDAHO.—Cor. of *Statesman*, 21st: Elk City, Clear Water Station and Newsom Creek are full of busy Celestials. John has helped us out. The ditches and mines are now in the hands of a few. Those few prosper. I advise no one to leave this basin to go there. Warren's Diggings have not paid as well as formerly; in fact, nothing has been realized there. I still think the camp will come out right with plenty of water. Florence has been better. Laborers in the mines receive $5 per day, gold. But few are employed, however, most companies being large enough to do their own work.

LOON CREEK.—Oro Grande correspondence of same, 23d: The Yellow Jacket excursionists have returned, sore. Uncle Nate says the ground was salted. On Loon Creek, the claims are, as before, paying well;—no new strikes. Those who have no claims are making preparations to leave.

Montana.

NEW STRIKE.—Helena *Gazette*, Oct. 22d: Mr. Eads has struck good placer diggings in Eads' Park, two miles to the left of the Blackfoot trail. He has got 10 cents to the pan, and there are about 25 claims which promise to pay well. There will be plenty of water in the spring. The ground is laid over till the 14th of May.

PIPESTONE.—Geo. Smith, Mr. Taylor and Pete Brown are making $10 per day to the hand. I prospected three pans of dirt; the prospect weighed 45 cents. This company has claims that will last them for more than another season. I was informed that Mr. Parsons, Dick Craig and several other companies were starting up, all in fine spirits. Below the cañon, McDougal, Cook & Co. are commencing to operate successfully, after building an extensive dam and flume. The Belcher & Wood ditch and diggings are a success. It is considered that they have diggings that will last for years. On Little Pipestone, C. Cook & Co. have commenced to work again, but water is yet slim.

A NEW DITCH.—*New Northwest*, Oct. 22d: An able and energetic company has surveyed a ditch from Race Track to the rich country around the Gold Creek Mountains. It will be 6 or 7 miles long, and cost $25,000. It will be completed early in the spring.

Several companies are sluicing in Peterson Gulch, getting a fair yield. Water is wanting.

Nevada.

COPE DISTRICT.

LATEST FROM COPE.—Elko *Independent*, Oct. 27th: From the Argenta and Hamilton, ore of high assay value is being shipped to San Francisco for want of facilities to work it at home. Some of the ledges that have been exposed are very wide; among those, are the Buckeye, California and Idaho. Very rich croppings have been taken from other undeveloped locations.

Robert Paxton writes the *Enterprise* on the 22d, that he has been in Cope 2½ months, and located half a dozen leads, which excel any croppings since the early Comstock days. At ten feet depth, the ore will pay $150 per ton. John Atchison and others have a fine 10-stamp mill on the ground and partially up. Another mill is en route, which will be running by the 15th of December. The beauty of our ores is, they are easily worked.

BULL RUN.—*Independent*, Oct. 30th: The Porter is the representative mine. A few days ago a quantity of ore was taken below and worked by pan process $716.31 per ton. On Wednesday, Bradbury's pack train brought in three tons, which is consigned to San Francisco, to be reduced. It is expected that this lot will yield $1,000 to the ton. As yet a depth of only 25 ft. has been attained.

RAILROAD.—Pierson, Seamands & Cox are only down some six feet on the ledge, and have three feet of ore that pans out well in silver.

COPPER AND SILVER.—We were shown some samples of ore from the Josephine mine, Railroad District, yesterday. One piece had been melted down in a forge, and was a malleable lump of copper and silver. The mine is ten miles from the railroad, at Palisade.

HUMBOLDT.

BATTLE MOUNTAIN.—*Independent*, Oct. 30th: A new discovery called the Toledo, has been stripped 40 feet in width. The ore assays 30 per cent. in copper, $80 per ton in silver, and $10 per ton in gold. It is seven miles from the railroad. The Little Giant mine, which has produced a large amount of silver during the past year, is distant ¾ of a mile.

LITTLE GIANT.—Cor. Humboldt *Register*, Oct. 30th: G. W. Fox, who is now the sole owner of the mine, keeps his mill running day and night on ore that yields $150 per ton.

THE TRENTON has a shaft 65 feet deep, and a tunnel 150 feet. The tunnel exposes a vein averaging 30 inches in width its entire length, and the ore assays $400 per ton. They have shipped 15 tons for reduction.

DUCK CREEK.—We have quite an excitement occasioned by the discovery of large veins of argentiferous galena. This belt of ore extends a mile and a half in length, assays $200 in silver, and contains from 40 to 60 per cent. lead. The Avalanche will commence shipping ore in a few days. The Shiloh is turning out large quantities of ore which pays $175 per ton as per last shipment.

BUENA VISTA SERIES.—A tunnel is being run to cut the several veins at considerable depth, and if the ore is as good below as on the surface, a large quantity can be obtained worth $150 per ton. These are the first silver-bearing veins discovered in the district.

GOLCONDA.—We learn that this mine is looking well. It employs 25 men. The company is running its mill by steam power, and making regular shipments of fine bullion. A large quantity of tailings has accumulated, which pays handsomely. Each shipment averages about $4,500. A fine vein of ore several feet wide has been struck on the third south extension.

GOLD RUN DISTRICT.—A San Francisco company has purchased the Cumberland mine, of Charley Hassen, and is preparing to commence active operations next week with a force of ten miners. They intend to ship the ore by railroad to San Francisco for reduction. The Tartar mine has been sold to a New York company.

UNIONVILLE.—The Arizona mine continues to improve in richness. The Fall & Winter and Silver Mining Co's claims on this lead have yielded daily, during the present month, 100 pounds of fine bullion. This is exclusive of shipping ore, which is in itself sufficient to pay all the expenses of both companies.

ARIZONA EXTENSION.—The owners of the first North Extension, adjoining the Fall & Temple claim on the Arizona ledge, have succeeded in discovering the ledge, and expect in a few months to have a mine developed equal to the original location.

MINERAL HILL DISTRICT.—The *Reveille* of Oct. 30th, says: A person who arrived here from Mineral Hill this morning, told us that about one hundred men would stay here this winter, all well "fixed" for any weather. The principal work was done by Ward & Co. and the Austin Co., both of which are taking out ore for shipment to this city for reduction. Parties of men were engaged under contracts in opening certain claims. Those interested, anticipate that it will be a lively district next spring.

REESE RIVER.

CORTEZ DISTRICT.—*Reveille*, 23d: Wenban & Co. are working small parties of men in their St. Louis, Garrison and Artic mines, all of which are producing good ore. At present the mill is kept running during daylight only.

EUREKA.—Same of 25th: Letters received yesterday state that a party is about to build a Mexican smelting furnace, known as a "basso;" and that the original furnace, which was stopped a short time ago, was to be fired and charged at once. The letters also state that Col. Avery is about to erect a 10-stamp mill.

SILVER PEAK.—The company is now in a prosperous condition. Shipments of gold bullion from Red Mountain are made to San Francisco at short intervals; while ore is constantly accumulating. The property in mines embraced about 100 different ledges; but the silver-bearing veins, at Silver Peak proper—a number of which are of great size and superior character—are permitted to lie idle for the present.

YANKEE BLADE.—27th: We were informed last night that the miners were generally doing well, and that several small companies were taking out ore of a very high grade.

EUREKA.—29th: Several mines are producing fine smelting ore in large quantities. The Buckeye is among the best, and, as we were informed, its owners sold 200 tons of ore at the dump for $6,000—at the rate of $30 per ton. The ore was bought for the smelting furnace at the camp.

Same of 30th has the following: Col. Buel says that, in his opinion, Eureka is destined to become within a short period one of the first, if not the first, silver-producing district in Eastern Nevada. The ores of the district occur in limestone, and abound in galena, and they may be readily beneficiated by smelting. For this purpose everything needed is within reach. There is now one furnace in successful operation.

WASHOE.

SIERRA NEVADA.—Gold Hill *News*, Oct. 30th: The timbering of the drift in the rich vein of white ore recently developed, is completed. The main winze is continued, and drifting from it will be commenced next week. The second clean up for the present month is being made today.

BELCHER.—The old tunnel is cleaned out and put in working order. It cuts the ledge 152 feet below the surface, and a large amount of good ore is developed by it, samples assaying over $80 per ton on the average.

LADY BRYAN.—The mill is running steadily, reducing 25 tons per day. A winze 15 feet below the south drift, in the rich body of ore developed at the south end, shows the same kind of ore, continuing downward.

IMPERIAL-EMPIRE.—The shaft is about cleaned out, and sinking will be resumed next week. The upper levels of the old Imperial give the usual yield. No ore is produced from the Empire.

GOULD & CURRY.—Present yield over 60 tons per day, assaying $38 per ton. The yield is principally from the old north mine. The El Dorado tunnel has been opened over 800 feet.

HALE & NORCROSS.—The drift westward at the sixth level, near the bottom of the shaft, has penetrated 40 feet, and has cut a rich streak of ore a foot wide. This same rich streak was found in the level above.

CROWN POINT.—The main east drift at the 1,100-foot level is in 400 feet from the shaft, the face showing only porphyry. A winze between the 900 and 1,100-foot levels develops quartz, with an occasional little spot of ore.

ALPHA.—The drift north from the 1,100-foot level of the Imperial has penetrated 75 feet, and will open the Alpha nearly 100 feet deeper than the former deepest workings.

OCCIDENTAL.—The face of the lower tunnel shows improvement as progress is made. The old mine still keeps up its regular yield.

CONFIDENCE.—Preparations are being made to operate once more.

OPHIR.—Owing to trouble from water, and other difficulties, little or no progress was made during the past week in the main west drift. The water is all out now.

CHOLLAR-POTOSI.—Present yield 125 tons per day. Average assays $38 per ton. The Blue Wing section is not looking so well as formerly. The new hoisting works will start up in about a week.

DANEY.—The old shaft—240 feet deep—is being sunk 200 feet deeper.

OVERMAN.—The general producing aspect of the mine is exceedingly good.

YELLOW JACKET.—Present yield 165 tons of ore per day, principally from the north mine.

KENTUCK.—The good yield continues, principally from the 800-foot level, extracted through the Crown Point shaft. Four mills are running on Kentuck ore.

VIRGINIA-CONSOLIDATED. — New shaft over 400 feet deep and good progress made.

WHITE PINE.

WEEKLY MINING REVIEW.—*Empire*, October 31st: A few important strikes in outside mines are reported, and the developments daily being made in the productive mines continue to be of the most flattering character. At no period since the discovery of the district have miners and all classes manifested a better feeling or more faith in the permanence of the mines and the bright future which assuredly awaits White Pine than now. The depth of our mines is no longer questionable. Good ore has been found in paying quantities to as great a depth as 300 feet. Most of the mills have large lots of ore on hand, and the winter supply is being laid in as rapidly as all of the available teams can draw it. There is no probability that any mill in the district will be idle a single day during the winter, for the want of ore. Some few claims, showing well in good milling ore, have suspended operations of late, owing to the utter impossibility to get their ores worked. A great deal of work, however, is still being done on partially developed mines.

MILLS AND FURNACES.—The base metal interest continues to command a large share of public attention, and several additional furnaces will fire up the present week. The White Pine Smelting Works (Mosheimer's) are yielding about 35 tons of ore per week. At Tucker & O'Hara's furnace six tons of metal, estimated to be worth $165 per ton, awaits shipment to San Francisco.

The 40 new stamps which went into operation the first of the week, have made no returns yet. Both the mills, however, (Tregloan's and Stanford's), are doing good service. The Dayton mill goes into operation to-day, and the Robinson will steam up on Wednesday.

The Shields Smelting Works, two and a half miles west from Hamilton, was fired up Tuesday. They are now reducing ores from three different mines, producing bullion that assays from $140 to $500 per ton of metal. They can produce 1,000 pounds of bullion per day. Sanford Hall's furnace, at Shermantown, will be ready to fire up in a few days. Phillipe' new furnace, between Swansea and Shermantown, is also about completed. Both are blast furnaces.

BULLION.—*Empire*: Our bullion shipments for the week aggregate $53,687.20, against $48,790.14 last week, an increase of $4,897.06. At the Big Smoky mill there is estimated to be $10,000 in pulp, while several other mills will clean up to-day. ....*News*: Our bullion now goes to the Bank of California, San Francisco; National Bank of Commerce, Chicago; and to J. & W. Seligman & Co., New York. Shipment for the week, $40,573.72.

SPIRITUAL MINING.—*Empire*, 30th: The Munro Mutual Mining and Tunneling Co. is a New York institution whose members are all Spiritualists. Several acres of the flat near Eberhardt City comprises the mining property of the concern. The operation of the company are directed by Madam Munro, a clairvoyant, who professes to tell exactly where the pay grit is to be found. Capital stock of the institution, $10,000,000, of which amount $3,333,333.-33⅓ has been set apart as a working fund. J. L. Bigler is the Supt. of the company. He has a shaft down 60 or 70 feet, and yesterday it was reported that he had struck a fine body of good ore. Madam Munro is consulted daily while in a clairvoyant state, and her instructions immediately telegraphed to Supt. Bigler. Of late, most of the dispatches have read: "All right; go on." Among the faithful the stock has recently gone up to $32.50; so says Bigler.

OUTSIDE DISTRICTS.—"Paul," thus writes the *Empire* of Ely District: The Meadow Valley Company own the Pioche claim, on which they have a shaft down forty-five feet, showing a well defined wall on either side of a twelve-foot ledge. This is the best looking ledge I have seen in Eastern Nevada. The ore is of a redish cast, and contains a considerable quantity of lead, $40 in gold, and an average of over $300 in silver per ton. The company are erecting smelting works, consisting of two reverberatory furnaces, and one chloridizing and one cupelling furnace. In Peermout District there is only one ledge formed. The owners have had an offer of $30,000, which they refused.

Oregon.

SANTIAM.—*Oregonian*, 30th: The following from the *Statesman* records the "positively last" appearance of Santiam upon the public boards: "J. H. Moore and G. A. Eades, returned Tuesday from the desolate regions on the headwaters of the Santiam, once the scene of so many hopes. A host of expectations were created by Santiam discoveries; tens of thousands of dollars were expended in constructing a road, opening mines, building dwellings, and in erecting a sawmill and quartz mill. The work was well done, and proved expensive, because great results were hoped for, and no pains were spared to provide the needed means and appliances. Santiam stock is now no better than waste paper, the buildings are literally the habitations only of bats and owls, and the dreary tunnels are hideous hores."

Utah.

GOOD ORE.—Elko *Independent*, Oct. 27th: On Monday, Eder & Co. received 6,000 pounds of ore to ship to L. L. Robinson, San Francisco, that is supposed to be worth $18,000. The ore is from Pioche, a mining camp in Meadow Lake Valley. Pioche & Co. own several mines in that district.

GRAVES' CALIFORNIA WIRE WORKS.—We had intended to notice fully the important exhibition of our next door neighbors, on Clay street, H. T. Graves & Co., whose representation at the Institute Fairs is always a notable one. Everybody has seen their fine samples and wares in the Pavilion, but they can only get a full idea of the extent and importance of the home trade and manufactures of this house by calling at the works, No. 412 Clay street.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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San Francisco:
Saturday Morning, Nov. 6, 1869.

The Inventor's Medal.

In the awarding of the Inventor's Medal the Special Committee of the Mechanics' Institute is pretty generally deemed to have made a mistake. Waterhouse's "Rotary Mechanical Power" has been prononnced (virtually) by this committee to be not merely an invention entirely original, but one promising to be of "great benefit and valne to the people of California." The patent grauted to Mr. Waterhouse was not for an entirely uew mechanical power, bnt for three different combiuations of old devices, which seem to be as old as the steam engine, having been substantially invented by James Watt, in what is known as the "sun and planet movement," described in Bourne on the Steam Engine, London edition of 1862, p. 21. That the Waterhouse invention is not likely to prove of great practical benefit to the peoplo of California may be inferred from the fact, attested to us hy a competent mechanio conversant with the measuring power, that ahont 60 per cent. of tbe power applied is lost by friction. In the model exhibited, a weight of 300 pounds was easily raised, it is true; hut it was by a leverage of a crank having a sweep of several feet, to a winding cylinder of several inches, with no less power certainly than wonld be reqnired by a common miner's windlass of like leverage; and such was the friction tbat the weight, when left snspended, wonld scarcely move the crank backwards or fall to the ground at all. Perhaps with the consent of Mr. Waterhonse the matter may yet be recommitted and critical parties in geueral be satisfied as to what may be due to the credit of the Mechanics' Institute.

A Great and Good Man Fallen.—The telegraph of last evening announced the death of George Peabody, Esq. He died at London, at half-past eleven o'clock Thursday morning. In the death of Mr. Peabody a man has falleu, who, without titles or official honors, has acquired a world-wide reputation, and whose loss is sincerely monrned, as a public benefactor, by the two most important nations of earth.

List of Awards.—The list of awards for meritorions exhibitions at the late Fair is still in the hands of the Board of Managers, for revision and oorrection, as elsewhere stated. We shall probably be able to publish it, in full, as corrected, in onr next issue.

The State Capitol of California—Finished for Occupancy.

The completion to this stage of the splendid structnre at Sacrameuto is worthy of record as a note of civilization's progress on the Pacific coast. On the 6th of December, the Legislature will occupy its chambers in the bnilding, and the several State officers, the Supreme Court and the State Library will be found for the first time in our history, in permanent quarters. The complete finishing, gradiug, etc., will reqnire another biennial interval.

The State Capitol of California is a magnificent building, worthy, in uobleness of design, dimensions, and solidity of construction, to represeut the future of this State. The origiual architect was Mr. Clark, deceased; the presont architect is Gordon Cummings. The lower story is of Folsom granite, the npper ones are of brick. The bnilding measnres over 300 feet front, includiug porticos, with center and end wings, and 76 feet from ground liue to top of balustrade. The dome is 72 feet in diameter at its base, and with two stories of portico or tambour, rises 216 feet from the gronnd line. There aro 20 columns 38 feet nine inches high on the sides, rear and front; the latter snpporting a tympanum, on which are sculptured the fignres of Mining, Commerce aud Agriculture. There are also 76 pilasters, which form the division hetween the three stories of boldly-arched windows, of which latter there are 172 in the bnilding. The lower story, which forms the basement to the superstructure, has a sub-cornice and a full Corinthiau cornice, which crowns the entire building—a girth of over 1,300 feet. The basement, or first story, contains the Snpreme Court Room, and its adjuncts; besides offices for the Governor, Secretary of State, Controller, State Treasurer, Attorney-General, Snrveyor-General, Public Instruction, etc., etc.,—28 rooms in all, with all the minor appointments, and, like the other two stories, this is intersected by the center rotunda, and three largo halls, 16 feet wide. The second, or principal floor, which is reached hy three amplo stairways from the interior, and a noble structure of granite steps in front of the main portico, contains the Senate and Assembly Chambers, and State Library, each forty-six feet in height, with galleries, and finishing with domes, besides fourteen large rooms for the State officers. The third story has three large rooms for State Museum, and seventeen Committee rooms.

Much declamation, of a very nauseating character, has been perpetrated dnring ten years past, on the capital removal qnestion, and the impolicy of erecting any snch structnre for the transaction of the business of the State, at Sacramento. The result is dne almost entirely to the public spirit and pertinacity of the citizens of Sacramento, who "made the fight" on the capital question at every uew issue and turn in its thousand recurring phases, with a quiet promptness, a coolness and a determination worthy of the admiration of all other public spirited communities.

Sacramento is safely leveed—not a fool will raise his voice on that question hereafter—and to-day she is crowned with the dome that proclaims her own glory, as well as that of the State which henceforth will be proud to recoguize her as worthy to be the capital, since she is a monument of Californian pluck. The live citizens of Sacramento, led on by the *Union*, in like manner undertook to and did put through the Pacific Railroad against influences as adverse and as disheartening as the floods. The people of the State Capital have thus, in a very unostentatious manner, won to themselves a name that partakes of the glory of Venice, and of Chicago. Nobody within her levees can rise up and say, "I did it," for it is the result of a certain tone that characterizes the community, the principal feature of which is that same republicanism of Rome and Venice while no selfish "ring" or strong-willed individual loom up as dictator or as the enemy and destroyer of the people's spirit of unity.

Sacramento modestly points down the river for the future great terminal city of the Pacific Railroad—to Vallejo, and to Oakland, and San Francisco. But the competing lines of transportation from Sacramento now bring that city to the very borders of the ocean; at the same time she is the natural, as well as the *de facto* terminus of the road, herself. Situated in an agricultural region of boundless productiveness; the distributing point of the mines of the interior for about all that does not belong to the dominion of the future Southern Pacific Railroad; a place noted amongst our restaurateurs as "furnishing the cheapest living in the world," therefore favorably adapted to economical manufacturing and to furnishing homes of prosperity for laboring men: we see no limit to the growth of Sacramento. May she give the impress of her character to the destinies of the State.

The "Silver" Palace Cars.

Much has been said about the "Pullman" Palace car, but there is another competitor in the field for the favor of the traveling public, whose claims, though advertised merely hy verbal report, are equal, it would seem, to the Pullman, since the Central Pacific Railroad Company have stocked their road with them in preference to the Pullman car. One of these traveling palaces recently arrived at Oakland, in charge of the builder, Mr. J. H. Jackson (of the firm of Jackson & Sharp, Wilmington, Del.), who is accompanied by a party of 44 ladies and gentlemen, known as the Delaware party. The Silver Palace is the Woodruff patent, and is more simple in construction than the Pullman; having in the day time the seats throughout on either side, as in an ordinary passenger car, two always facing each other and constituting the lower berth in the night time; the mattrasses and upper berth being placed overhead, when not in use, and so effectually out of the way as not to leave anything distinguishable from the arrangements of an ordinary car. At each end of the car are two toilet rooms. The finishing is of crimson plush velvet, and silver plating.

The Wilmington car factory of Messrs. Jackson & Sharp is the second largest shop of the kind in the United States. It has supplied not only the Central Pacific, but the California Pacific road, with a large proportion of their best passenger cars.

Botanical.—Dr. A. Kellogg, the well known botanist, has just returned from a botanical tour through Oregon and other northern parts, bringing with him large and valuable collections of seeds, plants, and notes that will undoubtedly enrich the proceedings of the California Academy of Sciences during the coming winter.

Mr. Wm. M. Canby, botanist, and Isaiah Hoops, florist, who are at present on a visit to this State with the "Delaware party," have been very industrious in collecting seeds, and will take with them many novelties peculiar to Yosemite valley and other regions visited.

Vanderbilt Bronze.—We acknowledge the receipt of an invitation to be present at the unveiling of the Vanderbilt bronze, on Wednesday, November 10th, at the Hudson River Railroad depot, St. John's Park, N. Y. Attached to the cards of invitation are coupon checks to the platform and refreshment rooms. Thanks to the gentlemanly managers of the ceremonies; but we have "refreshed" quite too muchly at Commodore V.'s expense, on the voyage to this State in "ye oldon time," and have no hankering after any more of his refreshments.

Mining a Failure.

Mining may he declared a failure by many whose success is nevertheless based npon that interest; hnt we conceive it to be far more sensible to say that stock jobbing, incomplete working and reckless management are a failnre.

As Prof. Rowlandson once observed, when speaking of the Ophir, it is sometimes that a mine is found to pay under the stock jobbing system, bnt so seldom, that it may bo considered as merely a dangerous experiment.

The troubles in our mining enterprises (failnres?) may be set down as emanating from three causes: 1. Reckless waste of metal. 2. Reckless expenditures. 3. Too much stock jobbing.

Every miner must admit that there is enough metal in the ore. The thing is to get it out. Also that, exceptingin isolated cases, there has heen an unnecessary extravagance; and where it comes to stock jobbing, that has too much taken attention from legitimate mining.

Take our Nevada mining companies, where a systematic effort has been made to count np big figures as shipments, instead of dividends. This system of mining is absurd. We have not mined for profit; we have mined for metal, and run half off at that. Speculative mining is a failure. Let all accept it as such, and go to work on a real basis, that will soon establish a more prosperous condition of affairs. To do this we must adopt three principles: 1. More perfect working of ores. 2. Strict business economy. 3. We must abandon speculation.

The idea that we cannot make our great mineral domain a profit to us as a people, when the average per ton of all the ore in California and Nevada exceeds that of most mineral districts elsewhere, where they do make them profitable, is not worthy of consideration. We have only to do as we know well enough how to do, and to apply the common business principles to this branch that we do to others, and the results will he as profitable and certain as those of any other pursuit.

The Grand Carnival.—Great preparations are being made for the grand closing Carnival Ball, to be given under the management of the Directors of the Mechanics' Institute, at the Pavilion on Tuesday evening next. To induce those participating to properly sustain the characters they assume, four valnable prizes will he awarded to the first and second best caricature sustained, each, by ladies and gentlemen. The first prizes will he of $100 actual cost; the second $50. The space under the nave will be partitioned off from the side wings, and comfortable seats will be provided for spectators in the wings and galleries at graduated prices, from $1 to $2, as per advertisement. Carnival tickets for gentlemen and ladies, $5.

Not a Local Institution.—The best reply that could possibly be given to the objection mooted in our last issue against making the Mechanics' Institute of San Francisco a local California institution, instead of one calculated to foster industries, national and international, on the Pacific Coast, is to ho found in the list of premiums that are now actually awarded, from which it appears that all of the Pacific States are fairly appreciated according to their merits.

Spring Valley District Ore.—Mr. G. Henckel has brought a batch of ore from Spring Valley District to this city to he worked by Mr. Strong, representing the Red, White and Blue, the Telegraph, and the Mayott mines—situated forty-five miles west of Hamilton, and eighty east of Austin, and south of the Austin and Hamilton road. It assays from $300 to $1,700, and is a black-colored sulphuret, having copper stains.

Our Cities' Charities.

True religion is made up largely of kindness—kindness to one another, kindness to the unfortunate. The spirit of charity which prevails in San Francisco, has become proverbial the world over. Our people take a just pride in the reputation they have gained in this particular. Evidences of the spirit of benevolence, of generosity in giving, are visible all about us. Our public institutions, devoted to this object, are numerous and well supported. They have all been costly from the start; but our people have cheerfully borne the burthen—the public purse has never been closed. The benevolence of Californians needs only to be properly approached, to exhibit itself in deeds worthy of the highest praise.

Our hospitals are numerous, roomy and well arranged, providing liberally and beautifully for the sick of all nations. Our orphan asylums are temples of mercy, in which strange, though loving hearts, supply the places of parents to the little waifs of humanity, which fortune has cast upon the charity of the world. The poor inebriate, broken down in health and fortune, and too often left to swift destruction, is here sought out, and every effort made to reform him and make him once again a man. The unfortunate youths, who have wandered into ways of error, by reason of parental neglect or from other causes, are here provided with homes, schools and means of reformation. The laboring man or woman who comes among us, a stranger and alone, is not suffered to fall among thieves and robbers, as is too often the case; but kind hands and warm hearts receive them, advise them and secure for them ways and means by which they may earn an honest livelihood. Young men who gather here from all parts of the world—young men with means and of social standing at home, but who come here strangers, and with inclination to cast off the goodly restraints which parental watchfulness and kindness have thrown around them in their Eastern homes, find here Christain hearts and willing hands to lead them still in the paths of virtue. Fallen women, who are too often given over by society with scarce an effort to reclaim them, here find a way and refuge, and angelic spirits go out into the by-ways and highways and compel them, with Christain kindness, to come in and be saved.

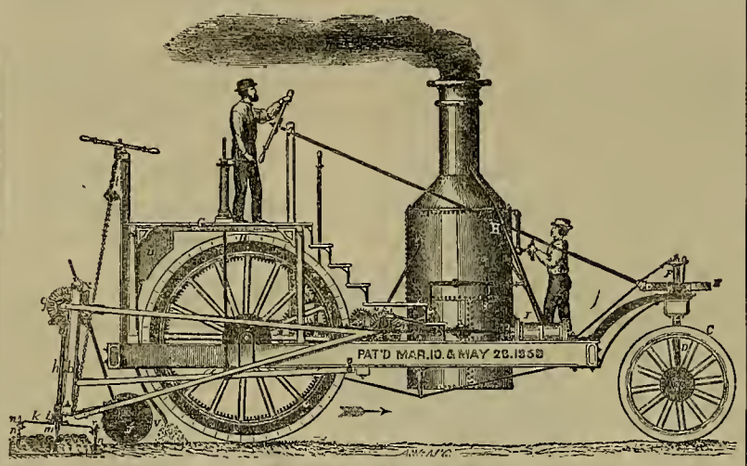
Many other public charities might be named which flourish and do untold works of charity and kindness among us. In fact, there is a great invisible brotherhood in this distant land, moved by that spirit which links man to his Creator, which unites all men and all nations into one great family of humanity, and which, without name or organization, is known only by the aggregate of its deeds silently and quietly performed, but which sends living streams of sunlight into the hearts of thousands of sufferers, of all conditions in life. May these streams ever continue to flow! Such acts angels witness and Heaven approves. They are the noblest efforts of humanity to make mankind happier and better, and render its sorrows and sufferings lighter and less.

Winterhoff's Circular.—The New York metal circular of R. C. Winterhoff, from which we usually give monthly extracts, has been discontinued. Mr. W., in his announcement of the fact, says that the Atlantic Cable, and the ever fluctuating currency, have of late years so affected the metal trade, that it does not now offer the advantages which it formerly did. The same causes render the monthly publication of a circular of very little account. The late increased facilities for communication and transportation have had a wonderful effect in disarranging old systems of business and introducing new; the people, on the whole, are benefitted by cheaper prices.

The Standish Steam Plow.

We here republish a side view of the Standish Steam Plow, already well known to most of our readers; but an invention which we desire to keep before the people, as one which promises to work a revolution in the important industrial department for which it has been devised. As will readily be perceived, it is a locomotive steam plow, the operation of which is quite novel and effective.

The manner of locomotion and general construction of this plow will be readily perceived by an inspection of the engraving, as well as the mode of steering or guiding the same. The man shown on the upper platform is engaged in that act. The earth is plowed transversely to the travel of the machine, and is cut up by a series of three or four cutters, one of which is shown in the engraving. Each of these series consists of four knives very similar in size and shape to the coulter, sometimes employed to cut the ground in front of an ordinary plow. The knives are made to revolve very rapidly, which action, together with the advancing motion of the machine, cuts up and pulverizes the earth more thoroughly than it can be done by the use of both the common plow and harrow combined. The depth at which the knives work is regulated by the hand wheel or elevating rod shown in the rear. There is a seed sower shown in the engraving, which may be used or not, as desired.



THE STANDISH STEAM PLOW.

that season. The crops raised on this ranch last year were below the average; but we are credibly informed that the yield on the ground prepared by this plow was better than that on similar and parallel ground prepared by the common plow. The experience gained by the use of this first plow, the "Mayflower," has enabled the inventor to devise important improvements, which will be introduced into the next one built.

The Mayflower has recently been repaired and put in as good working as practicable for so imperfect a machine, and is at work in Petaluma, turning over tough adobe soil, the full results of which we shall learn in a few days. Thus far, we understand the present trial has been eminently successful.

Over 100 acres of land were plowed with the machine here shown, last season, on the ranch of Mr. Kelihor, near Pacheco, in Contra Costa County, plowing three acres in a single hour, and demonstrating its economy over horse-power by the amount of fuel consumed, and time employed, careful records of which were kept.

The boiler, an old one, then employed, was found to be so unfitted for its work as to call for such extensive repairs and alterations as to render it impossible for the inventor to prosecute the work any further.

This plow drew the gold medal at the last Fair of the Mechanics' Institute for the best California invention exhibited at that time. It has been patented in this country, and in France, England and Russia. The foreign patents are for sale; also the right to manufacture in portions of the United States.

Test Trial of Safes—The Sanborn Steam Safe.

The Kittredge, Tilton & McFarland, and a new patent called the Sanborn Steam Safe, just brought to this coast by H. S. Lamber, were tried in a ten hours' fire on Thursday, on the site of the old American Theatre, Sansome street; all being of the same internal capacity, but externally successively larger in the order named, owing to the varying manner of construction. The peculiarity of the Sanborn safe consists in having copper vessels filled with water placed as a lining between the inner wall and the book-case. Fusible solder seals these vessels, and, when subjected to a fire, the soldor melts prior to the boiling of the water, then converts the water into steam which, filling the intervening chamber, serves as a protector against any degree of external heat, for any probable duration of fire. "Return tubes" prevent the water from running out in case the safe should roll in the fire.

At 5:30 A. M. the fires were lit; at 11.30 A. M. the Kittredge safe smoked, and was taken out of the fire; after 12, smoke also emerged from the Tilton & McFarland; and at 2 o'clock P. M. the fires were extinguished around the two last named, the test being pronounced by all present to be very severe. The safes were all warped, and the papers were quite burned to cinders in all but the Sanborn, which showed some slightly discolored, but otherwise uninjured. The Kittredge and Tilton representatives state that Mr. Lamber, the experimentalist, purchased inferior articles of their manufacture, which they surmise may have been tampered with; but a committee is to report on the matter. A friend present at the trial has left us a sample of cards and a piece of wood work contained in the Sanborn Safe, which are perfectly preserved.

Mineralogy of Yosemite Valley.—Garnets, sphene, molybdinite, hornblende, and other interesting materials, are reported by Mr. J. H. Caswell, to be plentiful in the granite of Yosemite Valley.

The University.—The California University Regents have been allowed $100,000 of the proceeds coming to that institution from the tide land sales.

The mill of the Nevada Land and Mining Company, Reno, started up on November 3d with the Stetefeldt roasting furnace, on Alpha, Humboldt, ore.

The Chico Fair.—We have some delayed notes concerning this exhibition, which will receive attention next week.

Closing of the Mechanics' Fair.

The Seventh Industrial Exhibition of the Mechanics' Institute closed on Saturday evening last, on which occasion the Managers announced the award of premiums. For "forty days and forty nights," plus one, the Mechanics' Fair Pavilion has been the center of attraction for old and young. The managers and members of the Institute may well be proud of the results which their energy and enterprise have achieved. The mechanics and manufacturers of San Francisco, as a whole, are men of superior intelligence and energy. They are drawn from, and unite the experience and advantages of, all climes and of all nations. In no other single city in the Union could there be organized and brought to such successful issue, so complete an exhibition of the products of the world's industry as is here displayed.

A most brilliant financial success has crowned this Exhibition. The total receipts and expenditures will be found in another column, as also the amounts realized for benevolent purposes. A handsome sum has been realized to be devoted to the reduction of the debt on the Institute building, on Post street, and for additions to the library, etc. The expenditures do not include the gratuitous labors of the managers of the Exhibition, which have been exceedingly onerous and self-sacrificing. It is also gratifying to know that the new, admirable and comprehensive plan adopted to aid the benevolent enterprises of the city, has proved a most signal success—realizing a much larger sum than has ever before been obtained by similar efforts of the Institute.

The result of this Exhibition will be a new and favorable impulse to the Institute, one which will inspire it with a disposition to put forth fresh energies to accomplish ends still more worthy of the mechanics of San Francisco, and more deserving of the commendation and encouragement of the public.

It has long been the wish of the managers and leading spirits of the Institute to furnish apprentices and younger members engaged in the industrial arts, more full opportunities for study, and the attainment of a comprehensive knowledge of the particular departments of industry in which they are engaged. To accomplish this, free evening classes, presided over by a competent teacher, are needed; together with frequent popular lectures on the mechanic arts, and the various sciences, to which the general public may also be admitted on the payment of a nominal fee for the series. We believe it is the intention of the management of the Institute to propose to the body of members that a suitable sum from the fund now in hand should be set apart for initiatory purposes in this direction. Probably one of the first things needed will be a set of philosophical and chemical apparatus, to be employed in the illustration of popular lectures, whereby the public, outside of the Institute, may receive a direct benefit for the patronage which they have so liberally extended towards this deserving institution.

The Japanese Colony, near Placerville, notwithstanding the unfavorable reports circulated a few weeks ago, is nevertheless in a prosperous condition; so says the Placerville *Democrat*. Quite an additional number of colonists have recently arrived, and hundreds more are expected soon. Plowing and sowing for the next year's crop have already commenced.

The Oakland Cotton Mill is now at work manufacturing Burlaps of first quality. Excellent samples of such manufactures were on exhibition at the Mechanics' Fair. This company is purchasing flax fibre for their mills, and we see it stated that they are offering as high as $90 per ton for clean broken flax.

Railway Accidents—New York Society of Practical Engineering.

The regular monthly meeting of the Society was held on Wednesday evening, October 13th, at Cooper Institute, New York City. The President, James A. Whitney, occupied the chair. The regular subject for discussion was "Railway Accidents and the Means of Prevcuting Them;" and a paper on this theme, written by C. Williams, a civil and mechanical engineer of New York City, was read before the Society.

Estimates of the Value of Human Life.

The author of the paper, in the introduction, adverted to the difference in the estimate placed upon the value of human life by railroad directors in this country and Europe. The fact that twice as much money is expended for safety in the latter country as here, seems to indicate that human life in the old country is twice as valuable as in the new. The cause of this apparent carelessness in the United States is probably the anxiety of railroad officials to get the road in running order as quickly as possible, so that money may begin to come in to their treasuries.

Kinds of Accidents.

He also demonstrated the great importance of the subject in consideration of the various kinds of accidents to which a road is exposed, such as those resulting from defective bridges and trestle work, the effect of rains undermining the track, the sliding of cuts and embankments, boulders, animals and other obstructions appearing on the track, switches displaced, trains being out of time, broken rails, etc., etc. Adding those causes of accidents which relate to the train, the list becomes appalling, and calls for the earnest investigation of the subject by every inventor and railroad director. One of the most serious hindrances, however, in the way of improvement in railways is the difficulty of enlisting capital.

Improvements Suggested.

In considering those improvements which relate to the road, the writer remarked that, although the introduction of improvements may add to the cost of the road, yet the ultimate economy which will result from the durability thus obtained will often in a great measure compensate for the first expense sustained in the carrying out of the improvement. First in importance in the discussion of the road itself, and those improvements necessary to give it a permanent and reliable character, is the ballasting and substructure of the track. The writer regarded that construction for a road in which gravel or broken stone ballasting was employed as the most desirable. Where this is not done, however, some longitudinal subsill for the ties to rest upon must be used. The objection to the use of rail timbers for subsills, lies in the difficulty of replacing them when decaying; plank subsills are to be preferred. A new idea of ballasting or subsilling has been proposed for roadbeds of soft materials. It consists in adapting the principle of sand piles for the support of foundations. Among the various methods of carrying out this principle to give more stability to the superstructure of roads, is the following: Trenches, longitudinally with the road bed, are dug under the rail or subsill with sloping sides, and nearly filled with sand. The plank subsills are placed upon the sand, and ties fixed to the planks. The sand being incompressible, the advantage of the horizontal resistance of the earth is thus obtained, and the road rendered stable. With reference to the various substitutes proposed for cross-ties, the writer asserted it as his opinion that none so far excelled them in economy and durability, especially where the ties have been prepared by some of the various wood-preserving processes. The fastening of the rail to the ties is, however, a subject on which more may be said; for the safety of a passing train depends in a great measure on the manner in which the rails have been secured to the foundation. This involves the discussion of chairs and spikes. There have been a number of improvements in railway spikes, the object being to prevent their drawing easily. The twist spike, so constructed as to turn in driving, and having notched or serrated sides, is extremely tenacious in its bold upon the wood. Another excellent device is the prong spike, which is split about one-half its length, and the two halves being bevelled at the points, branch off in opposite directions, and is very difficult to draw. The old chair is rapidly going out of use. Its principal defect is that it cannot be tightened. The fish joint has strength and can be tightened, but the process of tightening in this case is very inconvenient. A joint which may be easily tightened and kept so, is a great desideratum for the separating of rails at joints, and is a very serious cause of accident. An invention has been made by a Mr. W. Griswold, by which the tightening is accomplished automatically by the concussion of passing trains. The plates are thus kept in position, thereby insuring a tight joint with the two ends of the rail on the same level.

The Straying of Animals, Etc.,

Upon the track, is an important consideration, and the use of some good track guard is a desideratum. The old track guards do not seem to fulfil their object, as cattle sometimes break through and appear upon the track. The writer proposed that a system of beams presenting a sharp upper edge, should be laid diagonally from one rail to the other on either track. It thus becomes inconvenient for men or animals to remain long upon the track. With regard to those accidents occurring from vehicles attempting to cross the track while the train is approaching, he observed that whatever device is employed for closing a gate or displaying a signal, it should be operated by the approaching train. This may be accomplished in one plan by connecting a lever a certain distance along the track with the gate or signal, by means of a wire rope passing over friction rollers. In other cases, a metallic tube is substituted for the rope, and a tight-fitting piston is operated by the lever. Switches should be provided with an electrical apparatus, whereby notice may be given when a switch is placed wrong, this being almost the only means of preventing the many accidents occurring from this cause. The writer considered the comparative value of steel and iron rails as yet an unsettled question, and remarked that the fact of several companies adopting the former does not prove much to the point, for economy, on account of greater durability, may be the object instead of safety. A compound rail might be constructed, combining the advantages of steel and iron.

Merits of Steel and Iron Rails.

The meeting was also addressed by Abram S. Hewitt, who spoke at some length on the relative merits of steel and iron rails. He considered that steel must replace iron on roads transacting a large amount of traffic and running heavy engines at high speed. In other cases, iron would answer. As to the question of the comparative merits of steel and steel-capped rails, he remarked that where a good weld could be obtained between the iron and steel, there was no difference whatever, according to our present experience as to durability, the difference being a matter of economy. He described the manufacture of steel rails direct from the ore, and also spoke of a plan lately put to a successful test, of constructing rails by simply bending the steel over the iron, no weld, whatever, being obtained. It is found that, contrary to the expectation of most engineers, that continued use only served to force and confine the cap in place with increased rigidity and tightness.

The meeting afterwards adjourned until November 10th, when the subject will again be renewed and especial attention directed to subjects of safety brakes, safety wheels and axles, safety platforms, metallic cars, railway telegraphs, etc.

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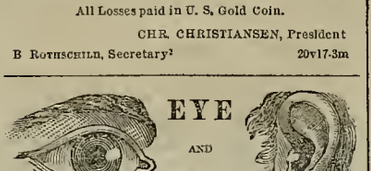

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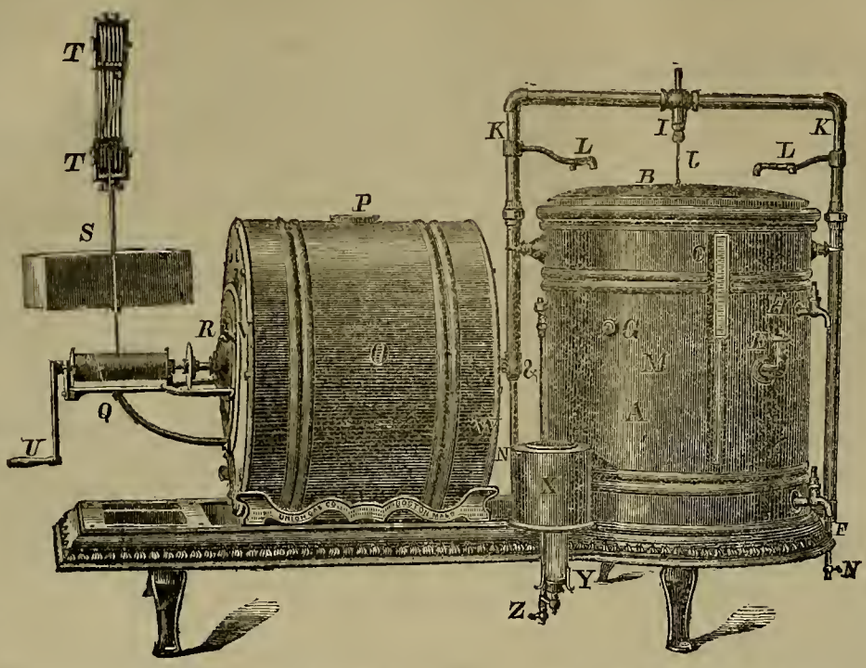

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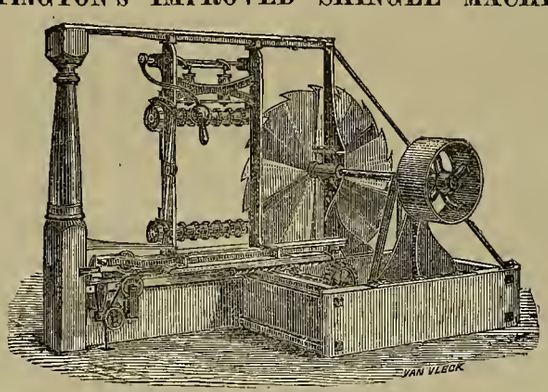

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[From the Mechanics' Fair Daily Press, Oct. 30th,]

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CLASS XXI.

MISCELLANEOUS ARTICLES NOT COMPRISED IN ANY OF THE FOREGOING CLASSES.

Most of the articles in this class have already been noticed in the columns of the Press. John F. Snow exhibits specimens of glove and feather cleaning and dyeing, and of fur dyeing, a most useful and economical art, in which he manifests much proficiency. Ephraim Vorbes exhibits his combination lock, a California invention, patented through the M. & S. Press Patent Agency. Combination locks are designed to be the perfection of mathematical and mechanical science, and Mr. Vorbes seems to have carried his inventive researches in this direction to about the fullest extent of human ingenuity. The mathematics of this invention are such that when the correct combinations are missed once, as may be done, accidentally, by the proper person, a second attempt is readily practicable; but when that fails, the device seems as if endowed with intelligence to know that it is being tampered with, and is immediately thrown into an almost inextricable confusion, from which it can be released only by some eight hours' steady work by the party in possession of the correct combination.

A great number of curious and interesting exhibitions are made in this department, which would be interesting to dwell upon, but the want of time and space admonishes us that we must here draw our lengthy "Review of the Fair" to a close. In its progress, we have no doubt omitted some things entirely, and perhaps dwelt too briefly upon others worthy of more extended notice. If our attention is called to anything in which we may have fallen short, we shall take pleasure in making full amends, therefor, in future issues of the Mining and Scientific Press—of which journal the Fair Press is but an adjunct.

Straw Wood.—At the American Institute Exhibition is shown straw paper, a substitute for wood,—intended to be used for inside work of dwellings, railroad cars, steamboats, or in any place where wood is used. It does not expand or contract. It can be moulded into any form by pressure, thereby saving the expense of working elaborate patterns. It is made fire and waterproof by asbestos. For ornamentation, it can be made to represent the most expensive woods, marbles, frescoes, bronzes, etc., etc., at a small expense, and can be taken down and put up in other places if desired.

Clothes Line Fastener.—One of the most valuable little novelties on exhibition is the patent clothes line holder of Smith & Freeland. By its application a clothes line can be put up or taken down as quickly as you can close a jack-knife, or wind a rope around a peg. It is self-fastening. You pull one end of the rope and it remains as tant as you strain it. The device consists of two small pieces of cast iron, forming a lever, and "short bite." A good thing. Sold for 75 cents at No. 17 Geary street.

A Permanent and Reliable Insurance Agency.—The firm of R. B. Swain & Co., whose office is on California street, below Battery, are among the oldest and most successful fire insurance agents of this coast. They represent none but first-class companies, and by attending quietly, but faithfully, to the interests of their business, they have gained an enviable reputation and a large and permanent patronage.

Home Manufactures.—The fresher we can get articles of food from the manufactory, so much purer and wholesome we generally find them. This is especially so with the chocolate, coffee, and other good things made by D. Ghirardelli & Co., at Nos. 415 and 417 Jackson street. Their business was established in 1854, and they have kept up a No. 1 reputation ever since.

The Locher Steam Plow model was withdrawn from the Fair several days since. It was our intention to have made a full and particular notice of it, but shall be obliged to defer it for some future number of the M. & S. Press, when we hope to be able to give an illustrated description of his important invention.

To Inventors

ON THE

Pacific Coast.

Messrs. DEWEY & CO.

Take occasion to call your attention to the following rules, regulations and suggestions relative to the obtaining of Letters Patent of the United States:

Established in 1860.

Our business has been long and successfully practiced, and we are thoroughly responsible for the confidence and valuable trusts placed in our charge. Our advice can always be relied upon as correct.

The principal portion of the patent business of this coast has been done, and is still being done, through our agency. We are familiar with and have full records of all former cases, and can more correctly judge of the value and patentability of inventions discovered here, than any other agents.

Steps Necessary to Procure a Patent.

The first thing required is a model, if your invention can be represented by one. It is not only immediately necessary in preparing the papers, but the law demands that the inventor shall, in all cases, furnish a model, which must not exceed twelve inches in any of its dimensions. A model of less size will answer when more convenient. It should be neatly made, of hard wood or metal, or both, and varnished or painted; the name of the inventor and the name of the article should be engraved or painted on it in a permanent manner.

When the invention consists of an improvement on some known machine, a full working model of the whole will not be necessary. It should be sufficiently perfect, however, to show, with clearness, the nature and operation of the invention, and the relation of the new to the old parts of the machine.

As soon as the model is ready, it should be carefully boxed and shipped by express, or otherwise, to our address, namely: DEWEY & CO., *Mining and Scientific Press, San Francisco.* Prepay expenses and send express receipt to us by mail.

A full description must also be sent with the model, embodying all the ideas and claims of the inventor respecting the improvement, describing the various parts and their operation.

Simultaneously with the model, the inventor should send us the first instalment of the Government fee, fifteen dollars. The money may be forwarded either by express with the model, or by registered letter, post office order, or by draft on San Francisco, payable to our order. Always send a letter with the model, and with the remittance, stating the name and address of the sender. On receipt of the model and Government first fee of $15 in currency, the case is duly registered on our books, and the application proceeded with as fast as possible. When the documents are ready we send them to the inventor by mail, for his examination, signature and acknowledgement before a Notary Public or Justice of the Peace, with a letter of instruction, etc. Our fee for preparing the case is then due and will be called for. The case will then be presented to the Patent Office, and as soon as the patent is ordered to be issued the Government last fee of $20 in currency will be required. The law states that every patent shall be dated as of a day not later than six months after the time at which it was passed and allowed, and notice thereof sent to the applicant or his agent. And if the final fee for such patent be not paid within the said six months, the patent shall be withheld, and at the expiration of two years the invention therein described shall become public property as against the applicant therefor.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separate ingredients, sufficient to make the experiment, (unless they are of a common and well known character), and also of the manufactured article itself must be furnished, with full description of the entire preparation.

For Processes, frequently no model or drawings are necessary. In such case the applicant has only to send us an exact description, and what it is desirable to claim.

For Designs no models are necessary. Duplicate drawings are required, and the specifications and other papers should be made up with care and accuracy. In some instances two photographs, with the negatives, answer well instead of drawings.

Inventors who do business with us will be notified of the state of their application in the Patent Office, when it is possible for us to do so. We do not require the personal attendance of the inventor, unless the invention is one of great complication, usually the business can be well done by correspondence.

The usual time required to secure a patent, when the case is conducted at our agency, is from one to two months. We sometimes get them through in two weeks. In rare cases, however, owing to delay on the part of Government officials, the period is sometimes extended for months. We make a special point to advance our cases as rapidly as possible, and have been successful in obtaining patents for this coast more surely and speedily than any other agency in the United States.

Letters Patent and Who Can Obtain them.

A patent is an open letter, embodying all the language of an inventor or his agent, contained in the specification, without alteration, and is granted to citizens of the United States, or Foreigners, male or females, (including minors), and is signed by the Secretary of the Interior and the Commissioner of Patents, with the seal of the Patent Office affixed. Its jurisdiction is for the whole United States, for the term of seventeen years.

Citizens of Canada and Nova Scotia have to pay a fee of $500 for patents in the U. S., owing to discriminations made against Americans.

What Claims can be Patented?

A knowledge of Ancient and Modern Mechanics and familiarity with American and Foreign patent issues and rejections, enables us to determine in a measure in all cases what can be patented, and how much can be claimed as new and novel, and be covered by Letters Patent. This is one of the most difficult questions encountered by both old and new inventors—one in which an experienced counsel is of great service.

A majority of the Patents issued during the past eight years to Pacific Coast inventors have been secured through our Agency; consequently we can more readily and correctly advise new applicants than any other agent.

Important Advantages.

Some of the advantages to be obtained by patronizing us may be enumerated as follows:

Inventors on this coast having their applications for patents made out through our agency, can sign their papers at once, and thus secure their rights *much sooner* than by trusting the same to distant agencies, situated at New York or Washington.

Many inventions on this coast are for objects and purposes but little understood by parties at Washington or other parts of the East. Our mining machinery, processes and operations are best understood by those familiar with their use. A personal verbal explanation is oftentimes of important service, and enables us to do more successful than agents generally.

Remittances of money made by individual inventors to the Government sometimes miscarry, and it has frequently happened that applicants have not only lost their money, but their inventions also, from this cause and consequent delay. We hold ourselves responsible for all fees entrusted to our agency.

By an able and faithful representative of our firm in Washington, our clients' applications are guarded against indifferent examination, unfair treatment in any contingency, and hazardous delays.

Patents for inventors on this coast are actually secured cheaper through our agency than any other, however flattering may be the inducements offered at the commencement by others.

Extensive practice gives us great facilities, securing regularity in the transaction of our business, which extends to EVERY COUNTRY IN THE WORLD where patent laws exist.

We assist in bringing valuable inventions to the general notice of the public throughout the Pacific Coast by illustration or description in the columns of the Mining and Scientific Press.

Confidential Advice.

Those who have made inventions and desire to consult with us respecting the same, are cordially invited to do so. We shall be happy to see them in person at our office, or to advise them by mail. In all cases they may expect from us an honest opinion. For these consultations, opinion and advice we make no charge. A pen-and-ink sketch and description of the invention should be sent together with a stamp for return postage. Write plain, do not use pencil or pale ink; be brief.

Remember all business committed to our care, and all consultations, are kept by us secret and strictly confidential. Our permanent business interests demand, as it were, a sacred compliance with our obligations as solicitors, and in reference to our strict fidelity in this respect we refer to one and all of the thousands of inventors and patentees on this coast who have patronized us.

Expense of Applying for Patent.

The Government fee, on filing an application for a patent in the United States, is fifteen dollars; and if the patent is allowed, twenty dollars additional is required. If rejected, the first fee of fifteen dollars is all that is demanded.

To the foregoing official fees must be added fees for preparing the various documents and expense of drawings. Our charge for preparing the documents for a case, presenting it to the Government, and attending to all business connected with it, is $25 and upward. For cases demanding extra work and attention, only a reasonable fee in accordance with the services required, to do full justice to the case, will be charged.

Following is the list of Government fees, payable in currency:

On every caveat	$10
On every application for a patent, for seventeen years	15
On every application for a design, for 3 y'rs and 8 mos	10
On every application for a design, for seven years	15
On every application for a design, for fourteen years	30
On issuing each original patent	20
On filing a disclaimer	10
On every application for a re-issue	30
On every additional patent granted on a re-issue	30
On every application for an extension	50
On the grant of every extension	50
On appeal to the Examiners-in-Chief	10
On appeal to the Commissioner from Examiners-in-chief	20
On every appeal to the Judges of Circuit Court, D. C.	25

Inventors on the Pacific Coast, located at great distance from the Patent Office, of all others, should be careful to avoid inexperienced, dishonest, or otherwise unreliable and irresponsible agents.

Inventors having models in our possession must send written orders when they desire any particular friend to see them.

DEWEY & CO., Publishers,

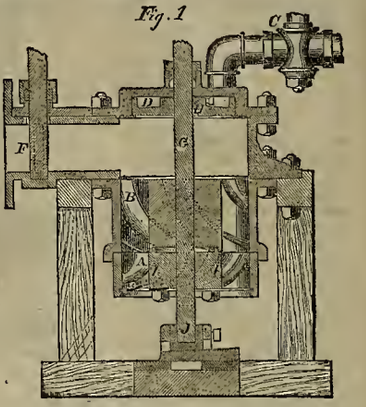
And Proprietors Mining and Scientific Press

[414 CLAY STREET

New Advertisements.

Lind's Improved Water Wheel

Fig. 1



Has given the highest satisfaction to parties using it. We are now prepared to sell it at reduced prices. Will also contract for all kinds of Machinery—Flour, Saw and Quartz Mill. All our work guaranteed. We will send competent men to put up our Wheels and Machinery. We contract for or do it ourselves. Our extensive acquaintance with millwrights on this coast enables us to furnish millmen with the best of workmen at short notice. Drawings for contracts furnished gratis. Send for circular.

A. LIND, Millwright,
Pacific Iron Works, San Francisco.

Refer to John Sime and J. J. Haley. 10v19

Western Union Telegraph COMPANY.

GENERAL REDUCTION OF RATES.

A general revision of the Tariffs of this Company has been completed, and the rates between all points on the Pacific Coast

LARGELY REDUCED!

THESE REDUCTIONS VARY FROM

Twenty-five to Sixty Per Cent.

And are several thousand in number. The new system adopted bases tariffs upon AIR-LINE DISTANCES, thus giving each office, as far as prices are concerned, the benefit of a DIRECT WIRE TO ALL POINTS.

☞ Particular attention is asked to the following scale of charges, applicable to EVERY TELEGRAPH OFFICE, WITHOUT EXCEPTION.

The COST OF A TEN-WORD MESSAGE to any office within

25 Miles will not exceed.....25 Cents.
50 Miles will not exceed.....35 Cents.
100 Miles will not exceed.....50 Cents.

While the charges in some instances may be LOWER, THEY WILL NEVER EXCEED the above scale.

The following are the old and new rates to some principal points:

TO	OLD RATE.	NEW RATE.
Alameda	50 cents.	25 cents.
Benicia	50 cents.	25 cents.
Haywards	75 cents.	25 cents.
Martinez	75 cents.	25 cents.
Oakland	50 cents.	25 cents.
Pacheco	75 cents.	25 cents.
San Leandro	75 cents.	25 cents.
San Rafael	50 cents.	25 cents.
Vallejo	75 cents.	25 cents.
Napa	75 cents.	35 cents.
Petaluma	75 cents.	35 cents.
Santa Rosa	$1 25	35 cents.
Stockton	35 cents.	35 cents.
Sacramento	35 cents.	35 cents.
Suisun	75 cents.	35 cents.
Sonoma	$1 00	35 cents.
Vacaville	75 cents.	35 cents.
Portland	$3 00	$2 00
Los Angeles	2 50	1 50
Hamilton	2 50	1 75
Treasure City	2 50	1 75
Victoria	4 00	2 50

GEO. H. MUMFORD,
General Agent.

19v19-1w

Advertising and Subscription

Rates for the Mining and Scientific Press.

Subscriptions in Advance:—One year, $5; Six months, $3; Single copies 12½ cts; Monthly Series, $5 per annum; Quarterly Series (still paper binding) $6 yearly.

Lowest Rates for Advertising:

We shall adhere to the following rates (payable in gold coin) for advertising in the Mining and Scientific Press from this date:

One column, one year	$400 00
Half column, one year	200 00
One column, six months	200 00
Half column, six months	100 00
One column, three months (13 weeks)	100 00
Half column, three months	60 00
Per line (smallest type) one year	3 00
Per line (30 lines or more) one year	2 40
Per line, three months	1 00
Per line (10 lines or more) three months	80
Per line, one month (4 weeks)	50
Per line (10 lines or more) one month	40
Per line, one week	25
Per line (10 lines or more) one week	20

Particular attention will be given to preparing engravings, inserting advertisements in conspicuous, novel and attractive form; we will otherwise assist advertisers in getting up their notices, when desired.

☞ All advertisements in the Press appear in both the ☞ Monthly and Quarterly Series of the Mining and ☞ Scientific Press, which (by special arrangement) are ☞ placed for free reading in the principal hotels, steamboat and steamship saloons, depots, and public reading ☞ rooms and libraries in San Francisco, and the Pacific ☞ States. Many volumes are also bound, thus affording ☞ permanent advertising.

The Press now receives the largest and best advertising patronage of any weekly paper west of the Rocky Mountains.

In regard to the value of advertising in our journal, we refer with pleasure to those who can speak from experience—*our advertisers*. Better referees, or more reliable names, cannot be found in the advertising columns of any newspaper in the world.

DEWEY & CO.,
Publishers and Patent Agents.

No. 414 Clay st., San Francisco, May 1, 1869.

White Pine Items.

We gather the following from the White Pine papers:

News: The Aurora Consolidated is sending to mill seventy-five tons of ore per day, giving an average yield of $59 per ton. This company will be in condition to pay regular monthly dividends from $1 to $1.50 per share from the beginning of 1870 —or $16,000 to $24,000 per month....Addington is taking ont high grade ore from the 70-foot level....Borealis has struck good ore at 43 feet....California has started up again....Consolidated Chlorido Flat has taken out 371 tons 520 pounds of ore for the week ending yesterday, or 58 tons per day for the six working days....In Eclipse Consolidated, the second stratum of ore struck on the 112-foot level has been cut east and west 52 feet, and north and south 21 feet, and no bounds yet found to the body. Assays go $235 aud $436 per ton....El Dorado has shut down for the season....Hidden Treasuro sends to mill daily 25 tons of ore....Pogonip and Othello is running a drift from the center to the north shaft. Of 200 tons from the center, 50 tons milled $123 per ton. There is 1,000 tons on the dumps....*Empire:* Ore from Mammoth, 21 tons, paid $72 per ton. ....Eberhardt ships 20 tons of ore to Oasis mill daily. Work not yet commenced on the Defiance shaft....Paris has good ore on the 105-foot level....Rip Van Winkle, a now discovery, one-half mile west of California mine. Nels, Allen sud C. C. Downing are the owners. Thoy are taking out lead ore, and sell it for $25 at the mine. Will ship 25 tons to the smelting works at Swansea, the present week. ....Hartwell, Bullion Hill, looks splendid. A 30-foot drift at depth of 45 feet, shows $150-ore the whole distance....Truckee works seven men and ships three tons oro daily to Big Smoky mill, worth $111 per ton....The Bowie & Brown is bonded for a few days with privilege to prospect ad libitum. The price is $35,000, and the owuers are afraid the parties will take it, rich specimens having been found.

WALLA WALLA, Oct. 21th, 1869.

MESSRS, DEWEY & CO.—GENTS: Your letter of the 5th instant, with patent for crushing mill, is received, and I am much pleased and gratified for the care and expedition you have exercised in the matter.

Very truly yours, J. H. DAY.

THE PAIN KILLER is both an internal and external remedy.

THE PAIN KILLER should be used at the first manifestation of cold or cough.

THE PAIN KILLER.—Don't fail to keep it in the house ready for use.

THE PAIN KILLER is an almost certain remedy for CHOLERA, and has, without doubt, been more successful in curing this terrible disease than any other known remedy, or even the most eminent and skillful physicians. In India, Africa and China, where this dreadful disease is ever more or less prevalent, the PAIN KILLER is considered by the natives, as well as by European residents in those climates A SURE REMEDY.

THE PAIN KILLER.—Each bottle is wrapped with full directions for its use.

THE PAIN KILLER is sold by all druggists and dealers in family medicines.

REDINGTON & CO. and HOSTETTER & SMITH, San Francisco, General Wholesale Agents. no6

RETURNED.—Dr. J. H. Paine. Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

WANTED.—To rent a house of about six rooms, in a healthy location, near the business center f the city, for a gentleman, wife and baby. Will purchase or rent the furniture, Address X, box 17, P. O, San Francisco

DR. HALL has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Drult, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewlz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18 3m

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.

19v18 6m B. F. HOWLAND.

CO-OPERATIVE UNION STORE.—This is becoming one of the most useful institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco. 21v18-4w

New Mining Advertisements.

La Blanca Gold and Silver Mining Company.—Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of November, 1869, an assessment of one dollar ($1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 312 Front street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOSEPH GOLDMAN, Secretary.

Office, No 312 Front street, San Francisco, Cal.

Rippon Gold and Silver Mining Company.—Location of Works: Silver Mountain District, Alpine County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Isaac Lustig		5	$1 25
W m Brown	11, 232, 233	277	70
Daniel Toy	23 30	50	12 50
J Simar		34	5
Isaac Marks		35	5
S S Robinson		58	10
Matthew Davidson		79	12
Jas Allen		105	50
Mary Ann Toy		107	10
John Cosgrove		108	50
Mary Ann Roper		110	13
Belinda Roper		111	12
T C Riddell		112	10
Thos Maguire		115 149	50
Thos Mayglan		121 181	25
John Mason		122	10
Mary C Mason		123	10
H J Davis		127	10
Thos Craigie		129 208	70
Lott Mulcahy		130 157	15
Thos Fay		132	10
David M Short		134	10
Chas Mayer		135	10
J Bounaud		136, 161, 231 282	40
S C Lewy		137	5
John Sanquet		138	15
Lazard Godchaux, 139, 160 229 230			25
C Palmer		148, 222 289	27
Thos Reynolds		151 292	35
Michael English		152	25
F Mahon		155	25
P Cunningham		156	5
Thos McCullough		159	10
Stephen Medillan		164, 166 220	20
P J McMahon		170 183	50
Elizabeth Curran		194 195	20
F H Moore		210	20
C R Gregory		211	20
J Martenstein		225	1
P M Wellin		242	10
Jas Lough		247 248	20
Annie E Stewart		249	20
M C Shove		256, 257, 258 259	
		260, 261 263	90
John Hutchinson		268	1
B Curran		272 273	20
Henry Lue		278	25
E G Bidleman		283, 284 285	25
C C N Little		290	20
M Heaphy		291	5
Geo Langridge		294 295	20

And in accordance with law, and an order of the Board of Trustees, made on the sixteenth day of September, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Saturday, the sixth day of November, 1869, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. F. BERNARD, Secretary pro tem.

Office, northeast corner Fifth and Howard streets, San Francisco, California. oc30

POSTPONEMENT.—The above sale is hereby postponed until Monday, the fifteenth day of November, 1869, at the same hour and place. By order of the Board of Trustees.

no6 A. F. BERNARD, Secretary pro tem.

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$50 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	3	268	bal 78 32
George S Porter	4	209	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	10	1258	bal 127 75
J U U Williams	69	979	bal 92 21
P Farrell	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10	bal 1 00
W H Kelm	43	5	1 50
Otis V Sawyer	45	20	6 00
Otis V Sawyer	46	20	6 00
R G S McDonough	48	100	bal 10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	59	670	bal 63 00
J D Littlefield	61	630	bal 63 00
George H Russell	64	600	bal 133 12
S M Smith	74	200	bal 20 00
Samuel D Meyer	75	50	15 00
George B Merrill, Trustee	63	634	189 20
Otis V Sawyer	71	1200	bal 112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of Octoher, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. sc25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc9 GEO. H. RUSSELL, Secretary.

POSTPONEMENT.—The above sale is hereby postponed until Monday, the fifteenth day of November, 1869, at the same hour and place. By order of the Board of Trustees.

nov6 J. H. H. WILLIAMS, Secretary pro tem.

MINING AND SCIENTIFIC PRESS.—This San Francisco journal is an able exponent of the mining interests of the country.—*Empire, While Pine.*

Mining Notices--Continued.

Alleghany Consolidated Gold Mining Company, Location of Works: Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Tompkins	9	1500	$450 00
A L Whitney	32	185	55 50
Charles Adams, Trustee	12	10 0	300 00
I N Thorne	13	125	37 50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 37, New Merchants' Exchange, on the fifteenth day of November, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. oc30

Bucklin Silver Mining Company.—Location of Works: White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirtieth day of September, 1869, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 40 Merchants' Exchange, California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the tenth day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the thirtieth (30th) day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

S. D'ELL STONE, Secretary.

Office, NO. 40 Merchants' Exchange, California street, San Francisco. oct2

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty (50c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner Monigomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary

Office, southeast corner Montgomery and Jackson streets, San Frrncisco. oc30

Glenwood Mill and Mining Company,—Location of Works: Greenwood, El Dorado County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of October, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the fifteenth (15th) day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the seventh (7th) day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. oc15

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner of Monigomery and Jackson streets, San Francisco

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary.

Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Siempre Viva Silver Mining Company, District of Zaragoza, Sinaloa, Mexico.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the seventeenth day of September, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
R Bayerque	10	25	$37 50
J S Bacon	131	25	37 50
G Mahe	157	10	25 00
G Mahe	214	4	10 00
— Oesterlinck	164	20	30 00

And in accordance with law, and an order of the Board of Trustees, made on the seventeenth day of September, 1869, so many shares of each parcel o aldstock as may be necessary, will be sold at public auction by J. Middleton & Son, at their salesroom, 310 Montgomery street, San Francisco, on Monday, the eighth day of November, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOUN F. LOUSE, Secretary.

Office, 314 California street, Up-stairs, San Francisco, California oc23

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixth day of September, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Mrs B Bell	8	60	$30 00
E G Bidleman	109	50	25 00
E G Bulleman	110	50	25 00
E G Bidleman	116	20	10 00
E G Bidleman	117	20	10 00
E G Bidlemau	119	20	10 00
E G Bidleman	127	10	5 00
E G Bidleman	128	8	4 00
E G Bidleman	135	100	50 00
E G Bidleman	136	100	50 00
E G Bidleman	139	100	50 00
E G Bidleman	140	20	10 00
E G Bidleman	141	27	13 50
E G Bidleman, Trustee	79	100	50 00
E G Bidleman, Trustee	61	50	25 00
P W Dillon	32	50	25 00
P W Dillon	33	50	25 00
P W Dillon	34	50	25 00
Wm Farrell	131	10	5 00
Jessie E Greene	1	15	7 50
Jessie E Greene	2	15	7 50
Michael Herlicy, Unissued		5	2 50
John Hamill	66	15	7 50
John Hamill	67	15	7 50
John Hamill	106	15	7 50
John Mckewen	24	30	15 00
John Mckewen	25	150	75 00
Miss Mary McMahon	29	15	7 50
John Murphy	62	150	75 00
John Murphy	121	30	15 00
Wm Neagle	64	303	126 98
Wm Neagle	83	5	2 50
Thos Newcomb, Trustee	47	100	50 00
Miss Mary J Neagle	85	30	15 00
Chas Ockel	Unissued	5	2 50
B F Page	19	15	7 50
B F Page	124	10	5 00
D Richards	146	20	10 00
D Richards	150	50	25 00
Harvey Strong	24	15	7 50
F Stohr	37	10	5 00
F Stohr	38	5	2 50
Michael Shell	Unissued	10	5 00
Bartholomew Wool	36	30	15 00
B Wager	126	25	12 50

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of September, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., auctioneers, No. 327 Montgomery street, San Francisco, on Monday, the eighth day of November, 1869, at the hour of 11 o'clock A.M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. B. WINGARD, Secretary.

Office, 408 California street, San Francisco. oc23

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment (No. 2) levied on the twenty-fifth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. shares	Amount.
Bishop, T B	unissued	1000	$200 00
Guy, Frank	unissued	1000	200 00
Creighton, F	2 to 11 inc-ca	1000	200 00
Gibb, W T	1	1000	200 00
Gibb, W T	unissued	1000	200 00

And in accordance with law, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salerooms of John Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, Cal. on Monday, the twenty-fifth day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

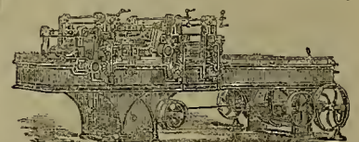
SAM'L S. MURPEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. oc9

POSTPONEMENT.—The above sale is hereby postponed until Monday, the twenty-second day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc23 SAM'L S. MURPEY, Secretary.

Woodworth Planers,



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The Air we Breathe.—"Mr. Dancer has studied the character of the solid particles contained in the air of Manchester. Samples of the air were washed by Dr. Angus Smith, and the fluid was afterwards microscopically examined by Mr. Dancer. A single drop of the water was computed to contain no less than a quarter of a million of fungoid spores. The fact was verified by examining an extremely small particle, and multiplying the result. The bottle of water having been kept for thirty-six hours, the quantity of fungi, already so great, "visibly increased," and on the third day minute creatures were observed moving about in the fluid. Keeping, however, to our former figures, we find that 150 drops of water would contain more than 37,000,000 of the fungi, these 150 drops being the washings of 2,495 liters of the air of Manchester, which is about the quantity of air passing through the lungs of a man in ten hours! The drops of water yielded a kind of dust, which in the space of three or four days produced considerable numbers of animalculæ, in which monads were most conspicuous. In this dust were particles of partially burned wood, fragments of vegetation, filaments of cotton and granules of starch."—*Exchange.*

Agassiz and the Banker.—The oration of Professor Agassiz upon Humboldt, has brought out, through the Newark *Advertiser*, an anecdote. A pompous mayor of a western city said to the Professor on a certain occasion that he had himself been deeply interested in natural science, but the pressure of business had prevented its pursuit. "I became a banker, sir, and I am what I am." The style of grandeur in which the words were uttered is said to be indescribable. Agassiz immediately recited his own early history; how his father had provided a place in a bank for him on his leaving college; how he had begged first for one year more of study, then for another, and when he got a third his fate was fixed. "And, Mr. W," said Agassiz, "if it had not been for that little firmness, I should to-day have been nothing but a banker."

It has been discovered by careful experiments in Charleston that the weight of a bale of cotton varies slightly with the temperature. A fall of ten degrees in the thermometer causes a bale of cotton to gain about a pound and a half in weight.

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Especially if in some remote out-of-the-way place.

Now that the railroad is open, we propose to give the residents of California the opportunity of getting single genuine Waltham Watches at the

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We sell more Waltham Watches than any other establishment in the country, either wholesale or retail; we send great numbers to every section of the country by Mail and Express, carefully packed, and in perfect running order. Our plan is this: You want a Watch, and see our advertisement; now, we want you first to write to us for our Descriptive and Illustrated Price List; we will send it, post paid, by return mail. It explains all the different kinds tells the weight and quality of the cases, with prices of each; you then make a selection of the kind you prefer, and send us your order. We will then send you the Watch by Express, with the bill to collect on delivery. We give instructions to the Express Company to allow you to open the package and examine the Watch; if it suits, you can pay, and take it; if not, you are under no obligation to receive it; and if it is taken, and afterwards does not prove satisfactory, we will exchange it, or

REFUND THE MONEY.

As an indication of the Prices, we will quote one Watch from our list. The P. S. Bartlett, Lever Movement, with Extra Jewels, Chronometer Balance, Patent Pinion, Patent Dust Cap, and all the other late improvements, in a Solid Coin Silver Case,

$28 in Greenbacks, or about $20 in Coin;

All the other kinds, both gold and silver, in the same proportion. Do not order a Watch till you have sent for a Price List, as it contains a great deal of information regarding these Watches that will enable you to make an intelligent selection. Don't forget, when you write, to state that you saw this advertisement in the Mining and Scientific Press, and you need not put in stamps for return postage. Address in full,

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W. S. Hobart, Esq., Virginia City, Nevada.

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21v16-3m W. McCRINDLE, Manage.

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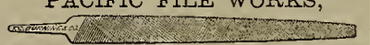

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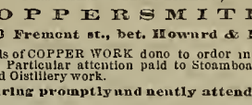

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To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—

One Steam Engine, 60-horse power, made by Burden, Brooklyn, New York.

Two large Boilers, in complete order.

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One Chile Mill.

One Cornish Lift-Pump, 6 inches, of superior make and finish.

250 feet of 5-inch Iron Suction Pipe.

One large Water Tank.

And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.

The Company having ceased operations intend selling off their effects as speedily as possible.

For Particulars as to price, etc., address, by letter or otherwise, I. W. CAMPER, at Indiana Ranch; OCOROE B. HORNISH, Marysville; or E. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has everrequired repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

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BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

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Heater & Sediment Collector

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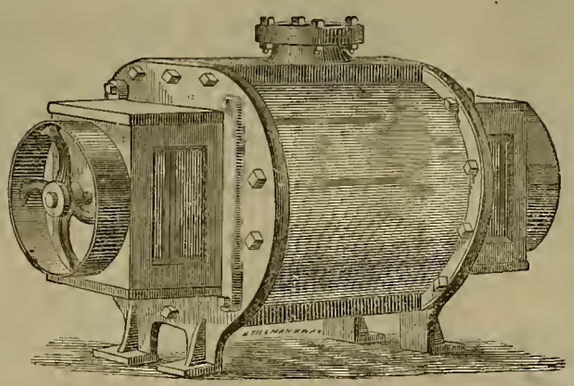
Awarded the First Premium at the Paris Exposition.



Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

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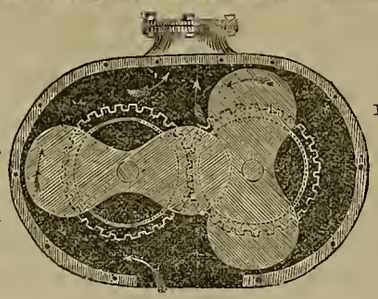

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CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Ageney, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

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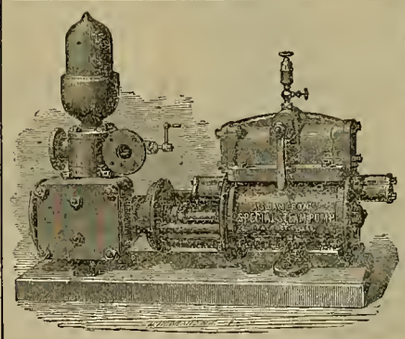

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Sporting, Cannon, and Musket Powder, sold at greatly reduced rates.

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They operate by their powerful influence on the internal viscera to purify the blood and stimulate it into healthy action—remove the obstructions of the stomach, bowels, liver, and other organs of the body, restoring their irregular action to health, and by correcting, wherever, they exist, such derangements as are the first origin of disease.

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For **Dysentery** or **Diarrhœa**, but one mild dose is generally required.

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As a *Dinner Pill*, take one or two *Pills* to promote digestion and relieve the stomach.

An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.

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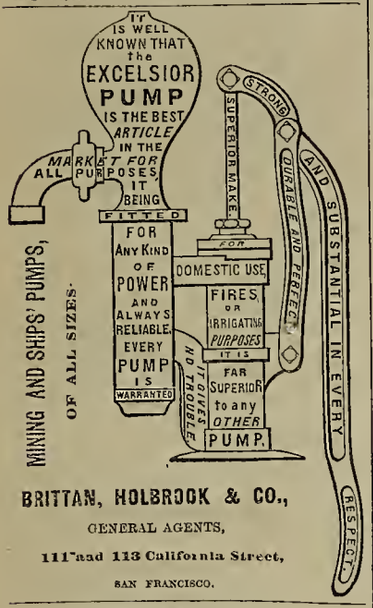
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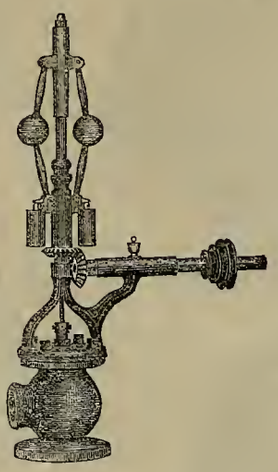

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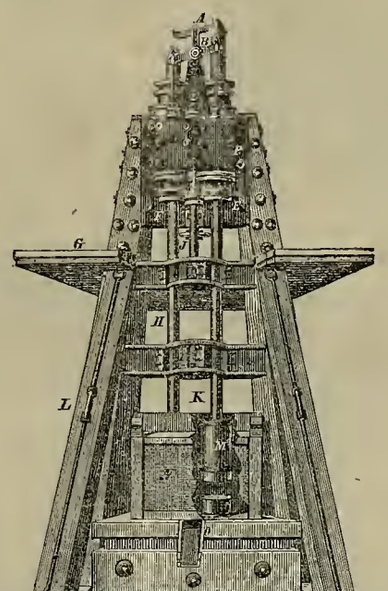

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Cost of Mill with a capacity of 25 tons per day, $2,500.

THIS MILL IS LESS COMPLICATED

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Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 25 pourings of brass. GALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs. A. S. Hallidie & Co.—Gent's:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

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Advanced students are also admitted to optional courses, and if already College graduates, are received as candidates for the degree of Doctor of Philosophy.

Tuition, $125 per year of forty weeks.

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For copies of the Annual Circular and Report, letters may be addressed to the "Secretary of the Sheffield Scientific School," New Haven, Conn. 15v6-1y16p

MINING AND SCIENTIFIC PRESS.

Subscription, $5 Per Annum. Single Copies, 12 1-2 Cents.

A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, NOVEMBER 13, 1869. VOLUME XIX. Number 20.

Mechanical and Chemical Losses of Mercury.

The inefficiency of quicksilver attributed to "flouring" and "cutting up," may be due in many cases to mechanical causes, as will be understood after a visit to the quicksilver reduction laboratory of Mr. John Roach, or the works of New Almaden. The mercurial fumes condense in water into what is known as floured quicksilver; and if the ores producing them have been poor, the particles will not unite into *quick*-silver until they are subjected for some time to a special process of drying. The very minute globules of quicksilver have become coated with a film of water, gas or air, which suspends the alloying and cohesive tendency of the metal. Similar results may be produced by amalgamation in battery, to account for low percentages of return in proportion to the contents. But silver amalgamation, and so far as the mercury is concerned, gold amalgamation likewise, are chemical processes in the wet way in addition to the mechanical amalgamation; and there are many well known and well understood causes of loss of mercury that can easily be avoided by merely being understood.

Certain of the California gold ores that contain gypsum as gangue (sulphate of lime) will not mill to one-third of the assay. Mr. Rickard reports his observation that, particularly in Chili, and in some parts of Mexico and Nevada, carbonate of lime is found in large proportions in gangues of silver ores; and when amalgamation is the process of reduction adopted, says very heavy losses result from the impossibility of roasting the ores previous to, or the tailings after, amalgamation, such roasting having the effect of generating caustic lime, which in contact with the mercury in the amalgamating vessels, occasions a ruinous loss of that metal, while it sickens the remainder, and checks, or entirely stops, the amalgamation of the silver. This inconvenience was so great some years ago in Chili, that a reward of $20,000 was offered by the Government for the introduction of a process that would enable the ores to be *entirely* reduced in the country, the practice having been to extract the native and chloride of silver existing in the ores by direct amalgamation, and ship off the tailings (relaves), containing the metal in the form of sulphide—antimonial or arsenical silver—to Swansea, for furnace treatment; or if too poor to bear this expense (about $40 per ton), they were thrown away.

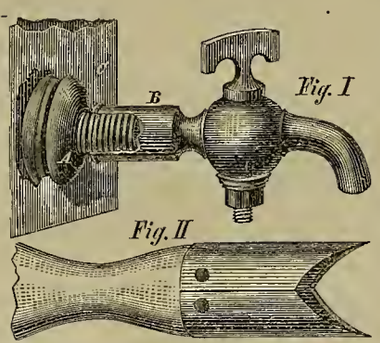
To get around this difficulty in amalgamation, as well as the depreciation in manganese ore by presence of lime, Mr. Rickard extracts the carbonate of lime by a simple process, separately.

In the mechanical process of amalgamation, whether it is "rusty gold" that is coated, or the mercury itself which refuses to do its duty, the result would of course be the same.

THE Hale and Norcross cross cuts, at their sixth level, have discovered an additional rich body of ore.

Hall & Garrigan's Device for Securing Faucets, Tubes, Etc., to Cans.

We give herewith an illustration of a new and improved device for securing, without the use of solder, faucets, tubes, pipes, etc., to tin or other thin metal vessels, such as oil cans, etc., from which liquids are drawn. This device is intended to so bind or secure the faucet, tube or pipe to the vessel that the liquid will not be wasted in drawing it off, while the manner of attachment is such that the vessel will not be thereby injured. The invention is especially adapted for the use of families, hotels, druggists, painters, and all consumers of, or dealers in, oils or other fluids, which are kept in thin metallic vessels. It is also valuable as a connection for bath tubs, copper and tin boilers, gas meters and holders, tanks, feed-pipes; also rubber and leather vessels, etc.



HALL & GARRIGAN'S DEVICE FOR SECURING FAUCETS, ETC.

In order to understand the principle and use of the device, we will suppose we have a five-gallon can of oil to open. The can should be turned down on its side, and an elliptical hole made in the proper place, by the cutting instrument shown in fig. 2, which may be done by a slight pressure of the hand. The cutter consists of two thin sheets of steel, bent into an elliptical shape, and properly affixed to a convenient handle, as shown. Having cut the hole in the can, a plate, having a perforated tube inserted through its center with a small thread cut upon its outer end for the reception of a faucet, as shown in fig. 1, is inserted in the hole precisely as a head or man-hole plate is inserted in a steam boiler. This plate having been put in place in the usual manner, and brought to its bearing against the inner surface of the can, another plate, similarly made, is placed against the outer surface, and the faucet screwed up to its place, which action presses the two plates firmly against the outer and inner walls of the vessel, in such a manner as to make a perfectly tight joint. For greater security a thin piece of soft leather is placed as a washer between the inner plate and the inner wall of the vessel.

It will readily be seen that by this device a faucet, tube or any other connection may readily be made, by which the fluid can be drawn off, without waste or trouble, or the use of solder, and when one can has been emptied of its contents, the device may be readily removed and applied to another. This apparatus is so simple that it may be employed by a child, and so perfectly effective and generally useful that it should come into very general use everywhere. It has been patented through the M. & S. PRESS PATENT AGENCY, for Messrs. Francis L. Hall, of San Francisco, Cal., and John H. Garrigan, of Portland, Oregon, who are prepared to dispose of County or State rights to manufacture and sell, or they will dispose of the right for the entire Union upon reasonable terms.

CALIFORNIA MEDICAL GAZETTE.—MRS. WINSLOW'S SYRUP.—The November number of this journal contains, besides an unusually large amount of matter especially interesting to the members of the medical profession, an article upon a subject which concerns every mother in the land. It is "Mrs. Winslow's Soothing Syrup." The writer, who is alluded to in a note to an editorial upon another page of the same journal as "a distinguished physician of this city," has had a specimen of this nostrum analyzed; being led thereto by the fatal poisoning of an infant to whom it had been administered. The analysis revealed the fact that if the printed directions accompanying the medicine are followed, an infant of six months is in danger of being dosed with opium to an extent which would hardly be safe for an adult. This is no guess work; *the figures are given.* The annual sale of this child-killer in this city is *one hundred thousand bottles.* No wonder,—says the writer,—that one-third of the babies in this State die before they reach the age of two years!

LATEST BY TELEGRAPH.—The Los Angeles and San Diego telegraphic reporters, daily report the discovery of rare gold mines somewhere within reach of either of those places. The Los Angeles man is highly excited about the discovery of gold at "Placerito"—anywhere in the mountains—and announces that "an experimental assay will soon be made." At San Diego the town is "excited," but the locality has not yet leaked out. Thanks for the latest information.

The Literary Forgeries.

Our readers will remember that some time since we alluded to the papers presented to the French Academy by M. Chasles, purporting to be letters of Galileo and divers other notables,—but the authenticity of which was doubted. It turns out that M. Chasles himself was hoaxed. A little dried-up Frenchman manufactured the whole of the documents, at various times, one after the other; having "struck a good thing" in the credulity of that honest savant, from whose pocket he wormed out, first and last, no less than $30,000. Monsieur C. is almost heart-broken; not, of course, at the loss of his money, but at his disappointment in learning the literary worthlessness of his treasures. The papers numbered several thousands. Letters of Copernicus, of Christopher Columbus, of Louis XIV, of Mme. de Sevigné, and a dozen others,—poetry in Shakespeare's own hand-writing, choice tit-bits by Dante and Tasso, and stories by Boccacio, were turned out by this fellow with perfect looseness. The wonder is that one individual could possibly have done it all, even though his talent might be of the most varied character. He has been arrested and has confessed.

THE CARNIVAL BALL.—The second grand masked ball given under the auspices of the Mechanics' Institute, took place on Tuesday night, November 9th, and served as a brilliant finale to the Fair of the preceding weeks. During the week subsequent to the closing of the Fair, the Pavilion had been cleared of everything but a few large pieces of machinery, leaving the central part of the hall entirely vacant, save at the fountain. This part, which formed the dancing floor, was enclosed by pink muslin, upward to the lower gallery, and the floor was covered with white canvas. The hall was decorated with the flags of all nations, and the light of twelve hundred gas burners falling upon the rich and varied costumes of the maskers, formed one of the rarest sights ever witnessed on this coast. Upwards of five hundred couples were on the floor at one time, and the galleries were literally crowded with spectators, many of whom joined the dancers after the unmasking. Between one and two o'clock, President Hallidie announced the award of prizes for the best sustained comic characters during the evening. The first ladies' prize was won by Mrs. Adelaide McDonald as "Hot Corn." The second by Mrs. James Duff as "Topsy." The first gentlemen's prize was awarded to C. C. Keene—"Chinese Fish Vender." The second to T. Gorham—"A Japanese." Almost the only fault to be found was with the supper, which was a most miserable affair for the price charged, while the principal aim of the waiters seemed to be, not to furnish any coffee or water, to the end that they might sell the unfortunate victims wine, which was not wanted. In justice to the Institute, it should be said that the supper was furnished by outside parties. The total receipts from the sale of tickets for the Ball were $5,500, the expenses amounting to $3,500.

The Veins, Minerals and Metallurgy of Colorado.

Mr. A. D. Hodges, Jr., a competent young mining engineer who recently visited, and pretty extensively examined, the mines of Colorado, has furnished valuable notes on this subject, which have in part already appeared in the *Engineering and Mining Journal*. From this and other sources we compile for this issue the following facts and figures:

The Country Rock

Around Central City is gneiss. Often the grains of quartz and feldspar on the one hand, and the mica on the other, occur in alternating seams or layers sometimes an inch or more in thickness, and in some places there are two sets of these bands crossing at right angles.

Veins and their Contents.

The gold veins have a general course of northeast and southwest. The gangue generally appears to be a mixture of quartz and feldspar, coarse to fine-grained; the feldspar of which often speedily decomposes on exposure. The width varies greatly, from a few inches to ten or fifteen feet; and in a number of the mines I visited, two to three feet of "pay rock" is not too high an average, at least for a considerable part of the workings. The minerals are principally iron and copper pyrites, with more or less galena and zinc-blende. Several of the mines at Nevada are especially rich in galena. In Pleasant View mine, near Central City, small crystals of carbonate of lead (cernsite), impregnate the vein matter; and anglesite is said to be about as common, although I cannot say that I saw any very certain specimen. Tetrahedrite occurs in several veins. Native copper has been found in the Gregory lode (among other places), and a specimen was shown me from the "Rising Sun" on Quartz Hill. In the veins rich in galena, I have found iron spar and dolomite.

In all these gold veins silver occurs in varying amounts, often far exceeding the gold in weight; but this is almost entirely lost in the stamp mills, or obtained in such quantities in the gold as merely to reduce the value of the more precious metal. Hence little or no account is taken of it, and it is impossible to obtain correct information on the subject at the mines or mills. For ten to sixty feet from the surface, the so-called "surface-quartz" is found. This is a light, porous, yellowish quartz material, formed apparently by the decomposition of the pyrites and of the feldspar of the gangue, and in which the gold occurs mechanically mixed in small grains and scales. It almost always gives quite an amount of gold on "panning," and presents no difficulty in amalgamating, being easily crushed and freely yielding its gold to the mercury. Under the surface quartz comes, generally, but not invariably, what is here called "cap rock," sometimes reaching a depth of two or three hundred feet. Of course "cap" is no proper rock, but is the general name given to matter that doesn't pay. Below the cap—and in some instances immediately below the surface quartz—come the pyrites, copper and iron, in variable proportions, mixed with the other minerals. It is commonly asserted that the copper pyrites are richer in gold than the iron, but this is a matter that remains to be tested; and the very general assertion that the veins grow richer the deeper one goes, also needs confirmation.

Richness in Gold and Silver.

The gold in the ore does not occur regularly, but is richer in some places than in others, both in a horizontal and in a vertical direction. It appears impossible to tell, from the mere external looks of the ore, how rich it may be, different heaps from different mines, often exactly alike in appearance, varying greatly in the amount of gold contained and in the ease of working. As far as I have seen, I should say that the average of the ores around Central might be four to five ounces of gold to the cord, but certainly no more; and every day mills are crushing ores which do not pay the mill charges.

Classification and Treatment of the Ores.

The gold ores of Central are divided into two classes: 1st class, of smelting, and 2d class, of mill ores. Of the relative amounts of these produced at individual mines, it is impossible to obtain accurate information. The general proportion given by the miners is 10 ton of 2d class to one of 1st; but this, although true, perhaps, in a few cases for short periods of time, is obviously incorrect in general; for not only is the quality of an ore continually changing in a mine, but some veins produce no 1st class ore. On comparing the amounts received at Professor Hill's works with the estimated amount crushed by the mills, it would appear that not one per cent. of the ore is 1st class. First class ore in general is such as yields at least 2 oz. of gold to the ton, this being about the lowest grade received at Hill's works. Second class ore *may* run higher than this, if the owners choose to have it milled instead of smelted. I use the terms 1st and 2d class because I find them in common use here. They mean merely ores sent to Professor Hill, and ores stamped in the mills.

Smelting for Matte.

The treatment of the ore by Prof. Hill is very simple, consisting in roasting in heaps and in reverberatory furnaces, and in smelting for matte. The common run of ore in pieces is roasted in heaps; the roasted product is then pulverized, and with the richer lead ores and the tailings from the stamp mills, is roasted in a reverberatory furnace. The roasting furnaces are of the class which has the floor or hearth divided into three parts, each part holding a separate charge, and being a few inches lower than the preceding. There are two such furnaces, which together roast 7 to 8 tons in 24 hours. There are, moreover, two common reverberatory smelting furnaces, each of which is charged with two tons of roasted ore every 8 or 10 hours. The resulting matte is shipped to Swansea, England, for further treatment.

Ore Prices.

The following is the scale of prices for ore delivered at the works, which are situated on North Clear Creek, some little distance below Black Hawk: For gold—For ore holding 2 oz. gold per ton, 20 per cent. of the value of the gold is paid; 3 oz., 30 per cent.; 4 oz., 40 per cent.; 5 oz., 45 per cent.; 6 oz., 50 per cent. For silver—75 cents per oz., after deducting as many ozs. of silver as there are per cent. of copper. For copper—$2 for each per cent., deducting 1½ per cent. from the result obtained by wet assay. No account is taken of fractions of an oz. of silver or of a per cent. of copper; gold is paid by the ¼ oz. The above values are in gold. These prices appear very small; still, when wood for fuel costs $5 to $7 per cord, and where smelters are paid $5 to $7 per day, the cost of smelting must be very large.

Battery Amalgamation of Second Class Ore.

The 2d class ore is not weighed but measured, the unit of measure being the cord, (128 cubic feet) which varies in weight between 6 and 14 tons. This class is worked in the stamp mills. These mills have commonly a simple construction. The stamps, consisting of stem, collar, head and shoe, are of iron and are revolving. Their weight varies from 400 to 800 lbs., the smaller weights being, however, unfrequent. The fall is from 10 to 14 inches, and the number of strokes per minute 25 to 30. The stamps play into rectangular cast-iron mortars, which have in the bottom and directly under the stamps, circular cavities, in which lie loosely the dies. In the mortar boxes two amalgamated copper plates are fastened, one before and one behind the stamps. These plates are sometimes fixed, and sometimes movable. A battery consists of 4 to 6 stamps. The screens before the stamps are of copper plate with horizontal slits, or of wire. Before the batteries are the tables, which generally are fixed, instead of being constructed so as to allow of different inclinations according to circumstances. The inclination of the tables in several mills, I found by measurement to be 1 in 7. On inquiring how the inclination was determined, the invariable reply was, that "the carpenter fixed that." The tables are lined with amalgamated copper plates, which are prepared generally by washing the copper plates (after they are fastened on the table) with a strong solution of cyanide of potassium until a bright surface is obtained, and then rubbing on mercury, the tables then being covered with a mixture of lime and sal-ammoniac until used. The operation of rubbing on mercury is repeated several times. On first running over ore, a large amount of the gold is taken up and remains permanently on the plates, gold amalgam readily settling fast on solid bodies. Below the copper plates are laid the blankets for catching the amalgam which is carried over the tables. The mass which passes the blankets either is lost, or is collected in tanks and buddled or washed in a rather primitive manner.

From the data given at the various mills, it would appear that a battery of 5 stamps will crush, on an average, ¼ cord of pyrites ore, or ¾ cord of surface quartz in 24 hours. About ⅓ of the gold obtained is found on the copper plates, which are inside the mortars. The amalgam is obtained by scraping the plates with rubber scrapers, after which more mercury is thrown on the plates. The tables are cleared once in 12, or once in 24 hours. The blankets are washed in tanks usually about every half hour. The blanket tailings thus obtained are generally amalgamated in pans, the Bartola being the favorite.

The Losses in Working.

It is impossible to state accurately what percentage of the gold is lost in milling, as no assays are made either of the crude ore or of the tailings, but that a very large amount is lost cannot be doubted, and this loss probably varies from 30 to 70 per cent., according to the nature of the ore. None of the silver is saved, except a small quantity, which, being obtained in the gold, merely diminishes the value of the latter metal.

Attemps at Concentration.

There are some variations from the above in some of the mills. For instance, in one case I found the ore from the battery passed over a shaking table of the Keith pattern—*i. e.*, with a bottom of corrugated plates. The mass from the tables passed into Cornish buddles for concentration, and was then amalgamated in Bartola pans This method, however, did not work particularly well, and millmen generally seem inclined to stick to the stamps and stationary tables. Attempts to work over the tailings from the mills are now beginning to be made, and thus undoubtedly much precious metal will be saved, some of the tailings being quite rich. Among other experiments at the Black Hawk Mill, the Rittenger percussion table is being tried.

Value per Ton, and Choice Between Milling and Smelting.

The Central City *Register* of October 14 says it must not be assumed that as two-ounce ore is the lowest grade named in Hill's schedule, therefore *all* the two-ounce ore is sold at those works; a very small proportion of two-ounce or even three-ounce ore being sold to the smelting works, "for the reason that a much larger net profit is realized by milling it and selling the concentrated tailings."

The price at the smelting works for two-ounce is $8 in gold, or say $10.80 in currency. The ordinary yield in a stamp mill for this class of ore is about $15 per ton in gold, or $20 in currency. The cost of milling, including the concentration of the tailings, is about $5 per ton, which leaves a margin in favor of milling of at least $4.20 per ton. Add to this the value of the concentrated tailings, which will vary from $2 to $5 for every ton of ore, and "it is clear that no miner can afford to sell that grade of ore upon the Professor's schedule. It is therefore quite unfair," says the *Register*, "to deduce so damaging a conclusion as that 99 per cent. of our ore is of a grade below two ounces per ton."

Rate of Stamp Drops.

With the bulk of ores a low rate of speed is better calculated to save the gold, while with some ores it has been found that sixty drops per minute is a better speed than twenty-five or thirty per minute. Mr. John Kip proved this so far as the Bobtail Company's ore is concerned, by increasing the speed of the Kip & Buell mill to sixty drops per minute, with a very considerable increase in the yield of gold. On the contrary, Messrs. Standley & Stalker find that ore from the California yields higher under a low rate of motion.

From a Metallurgical Stand-point—The Profits.

In correction of some too highly colored statements, so deemed by Mr. Hill, touching the profits realized from reduction by fire, that gentleman writes to the London *Mining Journal* of September 11th, a communication, from which we are enabled to extract the following pertinent facts and figures. The statement of Mr. Wincope, of the British and Colorado Mining Bureau, was to the effect that Mr. Hill forwarded overland, more than 5,000 miles, seventy tons of ore, for reduction at Swansea, the net profits of which transaction were $6,886 (coin), and that Hill's works were the largest in the country, and the owners are making immense fortunes. Mr. Hill replies: "That the ores forwarded to Swansea were purchased by the representative of a New York and Boston house, and were sent overland 700 miles, instead of 5,000 miles, as stated. This is the distance from our mines to the Missouri river, from which they were sent by water transportation to Swansea; that the net profits of the transaction were minus $400, instead of plus $6,886. In other words, the investors lost $400. If they had paid for the same lot of ore the price which such ores command here now, and shipped it to Swansea, or should ship it to Swansea now with the advantages of improved modes of transportation, the loss on the transaction would be between $4,000 and $5,000."

He continues: "The smelting establishment which I am managing consists of two reverberatory furnaces, one of which is not used now for want of ore. That this statement may not give to those not acquainted with this country an incorrect impression of its resources, I should state that there is a very large quantity of productive material taken from our mines. More than 99 per cent. of it is a quartz gangue, which contains free gold in moderate quantities. This material can be worked by amalgamation, at a very small cost, and profitably. The entire gold which it contains would not be sufficient to cover the cost of smelting it, to say nothing of the cost of mining. It is only the iron and copper pyrites which can be smelted, and the proportion of these, as indicated above, is small."

Shellac Varnish.—The solution of shellac in borax does not answer well as a varnish, on account of the quantity of borax dissolved. But the solution in ammonia, serves a good purpose. Puscher publishes some suggestions for making varnishes of various colors with it. Most of the insoluble earthy colors may be mixed with it. Sulphate of lime, however, is said to decompose the solution. Extract of logwood easily dissolves in it, so likewise does aniline green. We have long employed it to make an indelible ink, which is especially useful for laboratory labels, a mixture of lamp-black with the shellac solution remaining quite unaffected by acid vapors. The colored solutions are, in fact, available for many decorative purposes. The plain solution is made by macerating three parts of white shellac in one part of strong ammonia diluted with six or eight parts of water. This mixture must be frequently shaken for twelve hours, after which the solution may be completed by the application of a gentle heat.

Corns Cured.—*Hall's Journal of Health* gives this mode: "The safest, most accessible and the most efficient cure of a corn on the toe, is to double a piece of thick, soft buckskin, cut a hole in it large enough to receive the corn, and bind it round the toe. If, in addition to this, the foot is soaked in warm water for five or more minutes every morning and night, and a few drops of sweet oil, or other oily substance, are patiently rubbed in after the soaking, the corn will almost infallibly become so loose in a few days as to be easily pricked out with a finger nail; this saves the necessity of paring the corn, which operation has sometimes been followed by dangerous symptoms. If the corn becomes inconvenient again, repeat the process at once."

Lemons and sugar are strongly recommended to feverish invalids by *Hall's Journal of Health*. Two or three lemons a day may be taken with decided benefit. A lemon or two, according to the above mentioned authority, taken with sugar, as an entire substitute for supper, would give many a man a comfortable night's sleep and an awaking of rest and invigoration, with an appetite for breakfast to which they are strangers who will have their regular supper.

Apples for Food.—Apples, if eaten at breakfast, with coarse bread and butter, without meat or flesh, remove constipation, correct acidities, and cool off febrile conditions more effectually than the most approved medicines. They prevent debility, strengthen digestion, correct the putrefactive tendencies of nitrogeneous food, avert scurvy and strengthen the power of productive labor.

A Jump.—A man recently jumped from the third-story window of a house in Boston, on a wager. He held over his head a large and strong spread umbrella, by the aid of which he accomplished the feat without harm to his person. We trust no one else will be so foolish as to follow his example, as it must be to the greater or less risk of life and limb.

Largest Employer.—Senator Sprague is said to be the largest employer in the United States. He gives work to about 8,000 persons, and has recently raised their wages fifteen per cent.

Mechanical Progress.

The Palliser Lock-Nut.

The loosening of fish joints in railroads is a constant source of annoyance and expense. Once loose, the difficulty increases, and the wear and tear of the rolling stock, owing to the constant blows which the wheels strike themselves in passing over the loosened rail-ends, becomes a serious item. The means of prevention have been diligently sought after for twenty years. Patents upon patents have been issued for devices, all having for their end the locking of the nuts upon the bolts in such a manner that the jar to which they are subjected will not cause them to turn. Major Palliser some time since contrived a bolt, which was so shaped as to have the merit of elasticity and admit of slight elongation. These have done good service,—but the nuts would nevertheless gradually work loose; the same gentleman has now designed, to accompany this bolt, a "lock-nut,"—which is described and illustrated by the London *Engineering*. We quote: "Two nuts are employed, the one of an ordinary form, fitting freely on the bolt, and with a conical recess in the outer side to receive the cone of the lock-nut, which is screwed upon the bolt, at the rear of the other. It will be seen that there is a saw cut through one side of the lock-nut, to give it elasticity, and to grip the bolt as it is screwed up within the coned recess of the inner nut. By this means any amount of locking may be obtained, until the rear nut is home upon the front one, and the cut in the former is almost closed. It is one of those devices which recommends itself at first sight. The nuts cannot run back, being bound so firmly one by the other; they cannot rust up, for the inner nut is too slack and the rear one too tight around the threads to do so; or if through long neglect this should happen, the first half turn of the lock-nut releases it by reason of its own elasticity. In the same manner there is but little danger of the bolts being broken short in tightening them up, which is a matter of daily occurrence with ordinary fastenings, for as the bolt is reduced in the shank, the screwed part always retains its original pitch and form, and therefore its original strength, whilst the freedom with which the nuts can be released prevents all danger of undue stress upon the screw.

One hundred of these bolts and nuts have been under trial for the last two months on the Great Northern, and have, without exception, remained perfectly tight."

Hydraulic Buffers.

Col. H. Clerk, R. A., F. R. S., recently read a paper before the British Association upon the effect of water used as a buffer to check the recoil of heavy guns, in which he describes an arrangement for the purpose, submitted by him to the Secretary of War. We find it given in the *Engineer* for October 15th: "It consists of a wrought iron cylinder closed at one end, the other end fitted with a cap and stuffing-box, through which a piston rod passes. The length of the cylinder and piston rod are regulated by the amount of recoil required. The piston fits well into the cylinder, and is perforated with four small holes. The ratio between the diameter of these holes and that of the cylinder is determined by the amount of work required to be performed on the water with which the cylinder is filled, enough air space being left to allow of the displacement of water by the length of the piston rod due to the recoil. This air space also acts as an elastic buffer, and takes off the violence of the first impact of the piston on the water. The cylinder is firmly attached to the platform on which the carriage recoils, and the end of the piston rod to the carriage itself; so that on the discharge of the gun the carriage drives the piston through the water with an initial velocity V, whilst the water has to pass through the holes with an initial velocity R V, R being the ratio between the area of the cylinder and of the holes. This buffer has not only been used on shore with guns up to twenty-five tons weight, but also at sea, with light guns of only 1¼ cwt. and 8 cwt. in boats, and lately with 9-in. guns of twelve tons on board H. M. S. Prince Albert, in all cases with equal success.

In place of water it has been recommended to use oil, as there is less chance of corrosion taking place if the cylinder is kept full for any lengthened period, and no danger of the fluid freezing in ordinary frosts. The satisfactory manner in which this buffer has worked in checking the recoil of a gun of twenty-five tons weight leads me to anticipate that it could be usefully applied towards preventing, or diminishing, the destructive effects of a railway collision."

The "Mahovos."

We take the following from the report of Mr. Auchincloss, on steam engineering at the Paris Exposition: "A curious invention has recently been produced by Mr. C. Schonberszky, of St. Petersburg. Its object is to dispense with steep gradients on railways by the addition of a carriage to each train which shall act the part of a storehouse for momentum developed during a descent, whence it may be reproduced at will and assist the locomotive on the opposite ascent. He has given the title of 'Mahovos' to this new motor, and introduced a working model in the Russian department of the Exposition. The track for the same is 110 feet in length, having a rise of four feet in this distance. Near its lowest point is a turn-table for reversing the 'Mahovos' and a tank to receive the water contained in its train of five cars. The model weighs 275 pounds. The drawings accompanying the report, show two ponderous fly-wheels, resting by means of rollers upon a central pair of wheels, which run upon the track between two larger truck wheels. The five cars filled with water are coupled in front of the 'Mahovos' at the top of the grade. When ready for starting, the two large fly-wheels are lowered until their axle rests on the four friction rollers, and these in turn on the six carrying wheels on the truck through the medium of four rolls on their shafts. Under the impulse of gravity, the train commences its slow descent, during which a high velocity is ultimately imparted to the fly-wheels. It reaches the turntable after a lapse of two minutes. At this point the cars, being detached, continue their journey until the tank is reached, into which having discharged about 800 pounds of water, they are then led back to the turn-table. In the meantime the fly-wheels with their shaft are raised out of gear, the 'Mahovos' turned end for end, and made ready to re-ascend after the coupling of the cars takes place. This being accomplished, the fly-wheels are lowered a second time, when the cars rise quickly to the starting point."

NEW TREADLE MOTION.—From the *Artisan's* American Institute Fair notes: The two saws running by foot-power are by Quinby, Chambers street, and Hoag, of Pearl street, New York. In each are exhibited a new treadle-motion. In the Quimby machine, the motion given to the fly-wheel shaft is produced by clutches driving it in one direction as the treadle is pressed down, which treadle, on being released as the foot is raised, is thrown back by the action of a spring ready for another forward action. One motion of the foot gives three revolutions to the shaft. In the Hoag machine the reciprocating motion is given to the saw by two arms placed opposite each other on the fly-wheel shaft, revolving between two belts, and as the arms revolve the belts are forced apart, and when the arms assume a vertical position the belts are brought together by a how spring to which the saw is attached.

A NEW FORM OF STEAM ENGINE.—One of the engines on exhibition at the American Institute Fair, had the slide valve within the piston, which was hollow. The *Artisan* illustrates and describes it, and says "its essential feature consists in the arrangement of a reciprocating cylinder with a piston, stationary with reference to each cylinder, both being hung to have a rocking movement upon a trunnion,—constituted by the rock shaft,—disposed beyond the stroke of the cylinder, the valve and appliances thereof governing the motion of the cylinder being arranged within the piston."

GRINDSTONES.—It is well to reverse the motion of a grindstone at intervals. The "grit" is thus made to keep itself "sharp."

Scientific Progress.

Polarization of the Light from the Corona.

Prof. Pickering, of Boston, read a paper upon this subject before the American Association at its recent meeting, of which we find an abstract in Prof. Wurtz's *Chemical Repertory:*

"In order to observe the degree of polarization of the corona during the late eclipse, I prepared an Arago's polariscope, which consists of a tube closed at one end by a plate of quartz, and at the other by a double image prism of Iceland spar. Looking at any object through the latter, we see two images, which, when the light is polarized, assume complementary tints.

If, as is generally supposed, the corona is polarized in planes passing through the sun's center, its two images would be colored in such a way that every part would be complementary to that at right angles to it. Thus the top and bottom being blue, the sides would be yellow, while in the second image these colors would be reversed. In reality, however, both images were precisely alike and pure white, but one was on a yellow, the other on a blue background. Hence the corona was unpolarized, but the sky adjoining it was polarized in a plane independent of the position of the sun, since its color was the same on all sides of the latter. This curious effect may be explained by assuming that the earth outside of the shadow acted as an independent source of light, and thus caused polarization in a plane perpendicular to the horizon."

SEX IN PLANTS.—At the Salem meeting of the American Association, Mr. Thomas Meehan read a paper "on the laws which govern the production of sexes in plants." He showed that extra vigor or vitality determines the production of female flowers, instead of male, in the coniferæ. Only the strongest spurs, in the Larch, produce female flowers; male flowers appear after two or three years of weakening by the shade produced by increased growth of branches. The vitality is by that time so low that the whole spur dies. The same law, in various forms, prevails in the Amentaceæ, and others.

The Norway spruces, and those species generally which were the hardiest individually, or in comparison with other species, had greater powers to produce female flowers. Not so easily seen, but yet evident was the law in hermaphrodites as in monœcious plants. In many hermaphrodites there was known a tendency to become unisexual, sometimes in the male, sometimes in the female direction. A general debility follows the male in such cases, and increased vitality the female. *Viola Fragaria*, and other instances were given in favor of the latter point, and double flowers, variegated plants, etc., as instances of degeneracy to male weakness. The conclusion drawn from the facts given was, not to establish the theory, but to excite investigation whether it was not *the highest types of vitality only which take on the female form?* He concluded with the bare suggestion that the same laws might prevail in the animal world.

ANOTHER ASTEROID DISCOVERED.—On the night of the 9th ult., Dr. C. H. F. Peters, the astronomer of Litchfield Observatory, Hamilton College, discovered a new planet. It is the *ninth* discovery of the kind to his credit. Dr. P. writes thus the next day, to the Utica *Herald:*

"A new planet was discovered here last night, at about midnight. It belongs to the asteroids, and will bear the number 109 of that group. From repeated measurements the position resulted, for half-past one o'clock, fourteen degrees and one minute in right ascension, and nine degrees thirty-seven minutes in north declination, with a rapid motion almost parallel to the equator. Its brightness is equal to that of a star of tenth magnitude, and it has just passed its opposition with the sun."

PROF. MORTON ON THE CORONA.—It would seem almost certain that *the corona is simply an electric discharge*, no doubt varying with great rapidity, as we see in the case of the aurora; and to its variations we may attribute those apparent motions of the prominences which have been observed by so many, but which our large series of photographs so conclusively shows not to have had any actual existence.

THE FOSSIL GIANT.—John F. Boynton, Geologist, writes Prof. Morton of the Pennsylvania University, describing the ten-foot stone giant recently exhumed near Syracuse, New York, and says, that after a careful examination of it he has come to the conclusion that it is not, as was thought by many, a "petrified" man, but a statue, cut in sulphate of lime, probably quarried somewhere in the county. He refers it to the date of the Jesuit Fathers in the country, who occupied the Onondaga Valley some 225 years ago; and concludes that it was buried for the purpose of protecting it from an enemy who would have destroyed it. It was carefully laid down and covered with boughs and twigs; traces of vegetable matter now, of course, decomposed, being found all around it.

ORCHID REPRODUCTION.—Mr. Darwin says in a note to his work on the "Fertilization of Orchids": "I have endeavored to estimate the number of pollen-grains produced by a single flower of *Orchis mascula*. There are two pollen-masses; in one of these I counted 153 packets of pollen; each packet contains, as far as I could count, by carefully breaking it up under the microscope, nearly 100 compound grains, and each compound grain is formed of four grains. By multiplying these figures together, the product for a single flower is about 120,000 pollen-grains. Now we have seen that in the allied *O. maculata* a single capsule produced about 6,200 seeds; so that there are nearly twenty pollen-grains for each ovule or seed. As a single flower of a *Maxillaria* produced 1,756,000 seeds, it would produce, according to the above ratio, nearly 34,000,000 pollen-grains, each of which, no doubt, includes the elements for the reproduction of every single character in the mature plant."

AN ELECTRICAL EXPERIMENT.—"If a Leyden jar or a sheet of glass be coated upon each side within a short distance of its edge with metal foil, and a battery of high tension be applied, one pole to one side, and the other pole to the opposite side, the two surfaces of the glass acquire the same tension as the battery-poles; and as the intervening glass is an exceedingly bad conductor, these surfaces will retain their respective electrical states even after the battery is withdrawn, until connected by a better one; and when they are so connected, the discharge of this tension passes through the conductor and becomes manifest upon a galvanometer placed in its circuit. The proof that the charge is an effect distinct from the constant flow of the current caused by any leakage in the dielectric is, that as soon as the surface is charged, the galvanometer needle will return to zero, although the battery contact is maintained."—*Scientific Review.*

OPAL IN THE SPECTROSCOPE.—Prof. Crookes finds that when an opal emitting a crimson light, is placed before the slit of the spectroscope at a determined angle, the field appears uniform in tint, being reduced to a luminous band somewhat variable in breadth, and irregular in outline, though well defined and appearing very brilliant on a dark background. If now the source of light be so changed in position as to permit the light transmitted by the opal to enter the spectroscope, the appearance is entirely reversed, a luminous spectrum being obtained which has a black absorption band in place of the red, identical in position, form and outline with the red band previously seen. This, together with other analogous experiments, proves that those portions of opal which emit red, yellow, green, or blue rays are opaque for light of the same refrangibility as that which they emit.

THE SPECTRUM OF THE FIRE-FLY.—Prof. Young says: "The common fire-fly gives a continuous spectrum without any trace of lines, either bright or dark. It is noteworthy that this spectrum lies almost entirely between the lines C and F, the portion of the luminous diaphason where the thermal and actinic effects are nearly nil, and where almost all the energy expended is effective as pure light. How different from our artificial modes, in which not more than one-tenth of one per cent. of the expended energy appears as light, the rest being mostly wasted in heat, and partly in actinism."

URANIUM SALTS NOT FLUORESCENT.—M. Selhorst announces that the salts of uranium do not fluoresce in Geissler tubes. This is contrary to the statement of Becquerel,

Farming and Gardening.

The Flow of Sap in Trees.

It may be interesting in connection with another article on this page, in reference to the girdling of the trees in a large fruit orchard, to consider here, for a moment, the philosophy of the flowing of sap in trees, of which very erroneous opinions are generally entertained. Until quite recently, it has been taught that two opposite currents exist—that the "crude sap" taken up from the soil, by the roots, ascends to the leaves, where it is "elaborated," and thence descends through and along the vessels of the inner bark, depositing in its downward flow that which goes to increase the growth of the wood, much as blood circulates in the arteries and veins of animals. Although to a certain extent this may be true, it is by no means the entire truth. The conception, as a whole, is quite erroneous.

The conditions under which sap flows are various. In the spring, while the stems are yet enveloped by an almost impervious bark, and the buds by hard, horny scales, there can be very little if any movement of sap; although a rapid downward flow of liquid will be observed if the bark and outer wood is penetrated, as in the sugar maple, the grape vine, etc. The copiousness of this flow, in the maple—several gallons a day for two weeks or more, from a tree of moderate size—is evidence that the supply must be kept up from the earth, through the roots. This, however, is an artificial movement.

But when the buds have unfolded into leaves, a rapid evaporation ensues from their surface, and an upward and natural movement of sap commences. This flow is direct to the leaves, where it is properly elaborated, compounded with carbon, from the carbonic acid of the atmosphere, and with nitric acid and ammonia, in addition to that which it has already brought up from the roots. When thus prepared, it finds its way to the proper points for building up the plant, in a large measure, by a process of *slow diffusion*, through the *walls* of the wood cells, rather than by way of their channels. This process goes on to a greater or less extent in all directions; but in plants which build up their substance by successive layers upon the outside, the movement is mainly by way of the inside bark, or "cambium," as it is technically called, which has a direct connection with the tissue of the leaves; in fact, the leaves being mere continuations of the inner bark, in plants where such bark exists. In plants which have their increase from the circumference inward, this process proceeds altogether through the cellulous fibre.

While the new cells or wood is forming on the outside, the walls of the old cells are constantly growing thicker and stronger, by slow aggregations from this elaborated fluid. This process is what makes the "heart" of the wood so much better and stronger than the outside or "sap." Its cells are finally so filled up with fibre, as to render the passage of sap through them an impossibility by any force which nature employs for such purposes.

The colored heart wood which exists in many trees, contains no water or sap; its process of formation, as we have just said, has been completed. Its cells neither take any sap up from the roots, or return any to build up new wood. The only channel either up or down for the sap is through the white or, as it is sometimes called, the "sap wood," and the seive-like cellular tissue of the inner bark, which connects the outer bark with the wood of the tree. If we examine with a glass a cross section of a plant or tree, we shall find it made up of two kinds of tissue—one *cellular*, and the other *vascular*. The "cellular" is made up of a great number of very small cells, lying lengthwise, and generally "breaking joints" where they are joined together. The "vascular" consists of long vein-like tubes, which run along these cells. *They* are also cellular; but instead of having a length of not more than three or four times their diameters, as in the cellular, their length is many hundred or thousand times their diameters. These two portions of the plant tissue generally carry different juices—the first that which contains the sugar, starch, oil, etc., which is of an acid nature; and the latter the albuminous fluid which is alkaline. These two fluids are sometimes mixed, and more or less interchanged in their channels.

When a cutting from most of our common trees is girdled, and placed in moderately warm water to about an inch above the wound, a protuberance will soon form around the upper line of girdling, from which rootlets will shoot out. If a bearing grape vine is girdled, near its junction with the older wood, the result will be an increase in the size of the fruit which grows above the point girdled. The same result appears to have followed the girdling of the fruit trees in Michigan, noticed in another column. The efforts of nature to heal a wound of this kind are chiefly from above; but the healing or growing process also goes on, though slower, below the girdling, showing that while the chief wood-producing principle is brought down to the wound by the inner bark, a portion also finds its way below the wound through the wood cells, as already noticed. Although nearly all the organic substances that go to increase the growth of wood, find their way downward, from the leaves, that is no evidence of a flow of *sap* in that direction. Those organic substances move in the direction indicated rather by diffusion, and that in every direction, though mainly by the inner bark, as in most plants, that is, the locality where those substances are mostly needed. If there was a downward flow of sap in an uninjured tree, there would be a necessity for a discharge from the roots, a phenomena which does not exist. Evidence has also been adduced to show that there is an upward flow of sap through the inner bark, as well as through the wood cells.

The summing up of the whole matter shows that neither the flow of sap nor the movements of the elaborated organic matters which go to increase the growth are absolutely confined to any particular channels, but that they move in any direction. The fact that they are chiefly confined to particular channels in particular growths is merely dependent upon the structure of such growths, the arrangement of their tissues, the sources of nutriment, and other accidental conditions.

Important Guano Discovery. — An important phosphatic deposit has recently been found near St. Petersburg, on the Southern Coast of the Gulf of Finland, in Russia. It is probably similar to that recently found near Charleston, S. C.; but of much less extent. It was discovered by some laborers while draining a piece of low land, at a depth of about six feet from the surface. It is situated in the midst of an agricultural district, where mineral manures are much needed.

Such discoveries will no doubt become very frequent and quite general in many parts of the world, now that their value and possible existence is beginning to be known. They are similar in character, and no doubt have the same origin as the ordinary guano deposits found above the surface, and still in process of accumulation.

Beet-Root Sugar.—The production and consumption of beet-root sugar is steadily increasing in Continental Europe. The product of the German, Austrian, Russian and Belgian manufactures for the first half of 1869 was 680,847 tons—an increase of 123,583 tons over the first half of the previous year. This estimate does not include the product of France, which is very near or quite equal to all the rest of Europe. We have heard nothing of late with regard to the progress or prospects of the proposed beet-sugar manufactory in Sacramento.

Japan Chestnut Trees.—A shipment of 5,000 of these valuable trees was received at this port a short time since, which are selling at $25 per hundred. This is the second large shipment of these useful trees. California will soon be stocked with the finest chestnut trees in the world.

Girdled Fruit Trees Bearing Fruit.

Our readers have heard of the great atrocity of girdling some 1,500 fruit trees, near St. Joseph, Michigan, last spring, and how the neighborhood turned out in a body and bandaged them up so as to save them. It will also be recollected that a second, but lesser raid, was met in a similar manner. And now for the sequel. It will be interesting and gratifying to our readers to learn that every one of these trees is living, and that Mr. Green, the owner, has realized an immense crop of fruit from them the past season. This fact is considered quite marvelous by the residents roundabout. Those wise in such matters explain it by saying that the interception of sap by girdling has caused the production of fruit instead of wood, this season, and that the real trial, for the life of the trees, will come next year.

It used to be thought that there was no help for a girdled tree; but that theory is now quite exploded. In the above case the damage was remedied by bandaging the trees with strips of cloth dipped in wax. If the girdling was very broad, we apprehend that a large portion of these trees have borne fruit for the last time. A better way of saving girdled trees, we apprehend, is the following, which has been very successfully practiced for some twenty years, in Nashua, N. H. Mr. Lemuel Town, we believe, was the first to act upon and suggest to others the idea. His method is to graft five or six scions as large round as a goose quill and long enough to reach over the girdled place into the tree. The live bark is first notched above and below the girdle, the sprouts sprung into place and the ends fastened with wax. These scions grow rapidly and in time spread over the whole girdled surface. Apple trees completely girdled, and having the bark taken off over a foot in width on one side, have been saved in the above manner by Mr. Town.

Medicine for Fruit Stealers.—We have heard of various remedies to prevent fruit stealing—such as the throwing of stones, shooting salt and small shot, setting variously devised man-traps, legal and moral suasion, etc.; but the *Rural American* seems to have gone to the root of the matter, and made a suggestion which we think is more to the point than anything we have before heard of. The *Rural* thinks that fruit stealing is a disease, and should be treated medically. The prescription proposed is as follows: Take one ounce tartar-emetic and dissolve in hot water. To be sure that it is administered in the right direction and at the right time, choose some of the ripest and most tempting fruit—such as and where the sufferer will be most likely to find it; carefully dip the fruit in the liquid. The first effect will be a noticeable quamishness, and the second a disposition to abstinence from fruit-eating away from home, resulting in a complete cure of that species of kleptomania. The application is free from danger to the afflicted and often results in much quiet amusement to the lookers-on, and best of all it is singularly efficacious.

The Fall Rains have set in at a most seasonable time, and in so gentle a manner as to just meet the wants of the farming community. The intervals of time between are also highly favorable for farming operations. Most of the land is in a good condition for plowing and the hills are everywhere green from the effects of the warm and gentle moisture. All signs point to a most prosperous winter. The young grain on the summer fallow is up and looking exceedingly well and promising. There never was a time when farmers were more hopeful, notwithstanding the prices of grain is very much depressed.

In breeding to improve stock, it is of the first importance that the male should be of superior pedigree.

The Steam Plow.

From the back windows of our sanctum we look out upon the smoke of the steam plow as it courses back and forth over the adobe flats, cutting its twelve-foot swath, tearing up the annis and soap roots, and leaving them free from dirt to wither and die in the sun, plowing at times two acres per hour, and giving the tough, dry, sun-baked adobe such a cutting and turning, raking and stirring, mixing and whirling, airing and pulverizing, as it never got before, and this, too, with a plow not intended for anything like such heavy work. The adobe has at last found its master, and the advent of the steam plow will probably double the value of this class of lands. This plow has taken two gold medals at the Mechanics' Fair in San Francisco, valued at $200 each, and a prize of $300 from the State Agricultural Society. An acknowledged success in ordinary soil, it was doubted if it would work in adobe. The doubt is now exploded. The present plow does much better than Mr. Standish has claimed for it. He did not expect to work in this land at all, for want of sufficient power and strength, but set it going for the express purpose of getting the data necessary for the construction of a plow especially adapted to this stubborn soil. But strengthening some of its weaker parts, it does its work in such a manner, that he has been urged to stay and put in several hundred acres; and will probably do so, though he is receiving applications to plow thousands of acres of lighter soil in the San Joaquin Valley, from farmers who have seen the working of the plow. The grain is, in some instances, plowed in, no harrowing being necessary, the plow leaving the surface level and smooth. We understand that two or three of our adobe farmers are talking of uniting in the purchase of a plow to be expressly constructed for this kind of soil.—*Petaluma Journal, Nov. 8th.*

Wooden Shoes for Horses.—An ingenious farmer in Granfield, Wisconsin, Mr. Henry Luehring, has adopted the plan of strapping large wooden shoes to his horses' feet when he drives them upon his meadow land, which is very wet and soft; he also uses wheel tires five inches wide, on the same account. By this means he is enabled to haul from or upon his fields double the weight he could with ordinary shoes and tires. The horses, it is said, manifest no dislike to their novel foot-gear.

The Tide in the Bay of Fundy.—Most of our readers have heard of the wonderful tides in the Bay of Fundy, and they will be interested in the following account of them by a scientific observer: Late one day in August, my companion and myself were seated on the grassy, elevated banks of the river, about 80 feet or so above its bed, which was almost dry, and extended for nine miles below like a sandy wilderness. Many vessels lay dry on the high banks, taking in their cargo of gypsum. We thought the appearance very singular, but were too late to watch the tide that evening. Next morning we resumed our station, and soon perceived the water flowing toward us, and rising with a rapidity of which we had previously seen no example. We planted along the deep declivity of the bank a number of sticks, each three feet long, the base on one being placed on a level with the top of that below it, and when about half flow the tide reached their tops, one after another rising three feet in ten minutes, or eighteen in the hour, and at high water the surface was 65 feet above the bed of the river. On looking for the vessels which we had seen the previous evening, we were told that most of them had gone with the night tide.

Death of a Californian Inventor.—Mr. Tustin, of Petaluma, who was killed by the recent accident on the Union Pacific Railroad, Wasatch, was the inventor of the Union reaper, the Tustin Gang-plow, and several other valuable inventions. Mr. T. went East as one of the California Pioneers.

The Stetefeldt chloridizing roasting furnace at Reno, is reported by the telegraph to be a success, and E. Riotte has left Austin to take charge. The invention is, if truly successful, of great importance and value in solving the problem of cheap roasting.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, November 13, 1869.

Financial.

It is gratifying to note the steadily increasing ease in our local money market. The collection of taxes has about terminated, and there will be no more drain from that cause, imparting an additional sense of relief. We do not believe that at any period during our late stringency coin was really as scarce as was generally reported. By some means confidence had been weakened, and capitalists retired their means from free circulation until it should, in some measure, be restored. The panicky, uncertain, and feverish condition of the New York market; the fears generally entertained that a serious and widespread crash would ensue from the enormous gold gambling operations of Wall street; the dilutoriness with which money sent to move the wheat crop returned to the financial centre; the depreciated values of real estate; the diminished supplies of bullion from the interior; the clamors of Eastern shippers for specie from California consignees; the low prices obtained for our breadstuffs in the markets of consumption; the high prices paid for freights; the silly and suicidal twaddle of the advocates for paper currency, and a variety of other causes operating at the same time, were sufficient to create a sense of alarm among capitalists, and raised up a legion of anxious borrowers, who were endeavoring to fortify themselves against the expected crisis. Under so many adverse influences capital sheltered itself from general observation and use; but that the scarcity was not really so great as it appeared, may be inferred from the fact that at the period of greatest complaint a million and a half was readily collected for taxes, and the payments made in the custom-house for duties were heavier in September and October than in any other month of the year, with the single exception of July. The duties paid in the three months named were as follows: July, $942,814; September, $887,824; October, $830,258. It will be seen that while the complaint was loudest, our merchants paid, without difficulty, no less than $1,718,682 for entries in two months, and that too while the million and a half were being withdrawn for taxes. Right upon the heel of these heavy drafts relief is suddenly experienced! How could the seeming anomaly occur, if the reported scarcity were real? Whence have we drawn such comparatively abundant supplies, while over three millions are locked up in customs and taxes? We have also managed to ship $2,044,642 to China and Japan, and $5,860,514 to other places, since the first of September; making a grand total of over $10,000,000 withdrawn from circulation at the very period of greatest apparent scarcity, and yet, without visible receipts of great extent, we find increased ease and more liberal accommodation. In our opinion, the difficulty was caused more by lack of confidence than lack of means.

We quote bullion in fair supply. Gold bars range from 860@870; silver bars, from par to ¼ per cent. off; currency bills on Atlantic cities pay 25 per cent. premium on gold; sight coin drafts, 1@1¼ per cent. premium; telegraphic transfers, 1⅝@1¾ per cent. premium; sterling exchange, 48¾d.; commercial exchange, 49¼@49½; gold in New York, November 11th, 126⅞; Legal Tenders in San Francisco, 78⅜@79.

The duties paid at the Custom House in this city from November 5th to date have been as follows:

November 5	$31,502 97
November 6	36,639 48
November 8	11,557 89
November 9	18,970 27
November 10	20,822 95
Previously in November	97,425 42
In November to date	$216,918 98
In October	830,257 95
In September	887,823 95
In August	769,589 56
In July	942,814 71
In June	675,031 51
In May	595,039 24
In April	554,882 05
In March	780,447 40
In February	602,540 00
In January	532,997 97
Total since January 1st, 1869	$7,388,154 62
Corresponding period, 1868	7,491,564 82
Decrease this year	$106,410 20

The exports of Treasure from Nov. 1st to date have been as follows:

Nov. 4—Per America—		
To China	$1,164,338 85	
To Japan	2,000 00	
		$1,166,338 85
Nov. 1 to 4—Overland to New York		22,000 00
Nov. 5 to 11—Overland to New York		209,815 08
Total since November 1st, 1869		$1,396,193 93
Previously this year		32,531,657 85
Total since January 1st, 1869		$33,927,811 78
Corresponding period, 1868		31,612,418 46
Increase this year		$2,315,393 32

With his customary courtesy, Mr. Bontwell has forwarded to this office a statement of the Public Debt at the close of October last, as compared with its condition in the two preceding months. Here are the figures:

	Sept. 1.	*Oct. 1.*	*Nov. 1.*
Coin debt	$2,107,936,300	$2,107,936,800	$2,107,936,800
Currency debt	64,780,000	64,545,000	61,640,000
Railroad debt	60,860,320	61,180,320	62,188,320
Matured debt	4,648,486	4,522,696	4,389,986
Currency	386,826,713	389,115,942	393,148,760
Gold certificates	23,647,580	24,412,720	28,731,520
Total debt	$2,648,699,399	$2,651,713,478	$2,658,036,326

Following was the condition of the Treasury at the close of October:

	Currency.	*Bonds.*	*Gold.*
September 1	$12,144,487	$37,331,895	$101,214,986
October 1	6,559,004	50,751,121	108,804,658
November 1	7,248,295	64,280,548	116,984,711

Deducting the $25,000,000 due for interest, and the $29,000,000 of gold certificates, leaves a net coin surplus of $62,000,000. All the coupon bonds purchased by the Treasury are immediately converted into registered bonds.

From Europe we have the following advices: Business of all sorts was reported as being very still and quiet in England. The early intelligence that British grain crops would fall short of an average yield, had the effect of sending unusually large supplies to that market, in consequence of which, prices had gradually declined. A reaction was expected when those supplies should fall short by reason of the low prices obtainable. Money was in better demand, more activity prevailing than had been manifested for months previous; but still, the requirement was not equal to the regular autumnal demand. Several important loans were to be placed in market at an early day, the principal ones being for the purchase of the telegraph companies' lines, for the construction of Indian railways, and metropolitan improvements. We are advised by telegraph that the Bank of England has raised its rate one-half per cent., making the minimum 3 per cent.

City Stocks.

The market for miscellaneous securities continues quiet.—Early in the week, San Francisco Gas Company's stock was sold at $87 50 per share.—The Bank of California will disburse its usual monthly dividend of 1 per cent. ($50,000) on and after the 15th inst.—The Omnibus Railroad Company will pay a dividend of ½ per cent. on the 15th.

Mining Share Market.

The mining share market has acquired considerable activity since our previous issue, under a very noticeable improvement in rates, several leading descriptions of stock—Choller, Savage, and Yellow Jacket—participating largely. A more general disposition to invest has manifested itself, and many stocks that have not been called for weeks past were upon the market. The very favorable discovery in the sixth level of the Hale & Norcross mine has also had its influence in contributing to the present strength of the market. The contiguous claims are likely to share in the favorable prospects of the Hale & Norcross. A number of White Pine stocks have also been largely dealt in at improved rates, developments having warranted the advance. The increased reduction facilities in the White Pine region also add greatly to this improved condition of affairs.

HALE & NORCROSS—is in good favor at a smart advance. On the 9th inst. they commenced to cross-cut the vein from the sixth station, at a point fifty feet north of the station, and also at a place sixty-five feet farther north. During the same day they reached the clay wall in both of these cuts, and before nightfall were several feet in the ore of the vein, in both places. The ore is reported to be of excellent quality and equal to any found on the fifth level. Later news states that they had penetrated the ore some fifteen or eighteen feet, showing that the deposit is undoubtedly quite large. The hullion returns for the month of October foot up $110,116, against $80,907 in September.

SAVAGE—was in the market to a large extent, showing a very considerable improvement. This advance may be placed to the credit of the Hale & Norcross mine, since it is quite probable that the Savage mine, from its position, will reap some of the advantages now so favorable to the Hale & Norcross. The bullion receipts during the month of October aggregate $31,271, against $41,800 in September.

CHOLLAR-POTOSI—was in large request under improved prices. For the week closing with the fifth instant, 845 tons of ore were extracted; previous week, 1,063. The different ore-producing localities show little change in their general appearance since our last issue. At the fourth floor above the Potosi tunnel level the ore runs largely to gold. A dividend of $1 per share is payable since the 10th inst. Bullion returns for October aggregate $108,070, against $116,667 in September.

GOULD & CURRY—was in moderate request. During the week ending November 8th they extracted 323 tons of ore. At the seventh station, the drift running southeast is 190 feet in length, the material in the face being porphyry and clay, with a considerable flow of water. The north drift is in 120 feet, showing porphyry, mixed with small seams of quartz. The amount of bullion extracted during the month of October is $28,933, against $44,344 in September.

IMPERIAL—was in the market to a larger extent than last week, selling at better prices.—These remarks also apply to CROWN POINT. Assessment of $7 50 has been rescinded, and another of a like amount was levied on the 5th inst.—SIERRA NEVADA shows a bullion product of $16,100 for the month of October, against $12,666 in September. A dividend of 50 cents per share will be paid on the 16th inst.—EMPIRE had more buyers than for some time past, at an advance. Bullion receipts for October foot up $7,523.—KENTUCK will hold its annual meeting on the 24th inst.—GOLD HILL QUARTZ yielded $2,622 in bullion during the month of October.

AMADOR (Cal.) produced $54,603 in bullion during the month of October, against $49,542 in September. A dividend of $6 per share is payable since the 8th inst.—EUREKA (Cal.) disbursed a dividend of $7 50 per share on the 8th, aggregating $30,000.

RISING STAR (Idaho) levied an assessment of fifty cents per share on the 5th inst.—IDA ELMORE shows a bullion return of $31,205 for the month of October. Dividend No. 3 of $1 is payable since the 10th.

In White Pine stocks the business has been very fair, at improved rates.—CHLORIDE FLAT levied an assessment of $5 per share.—ORIGINAL HIDDEN TREASURE will hold a stockholders' meeting on the 11th day of December, for the purpose of considering the increase of the capital stock from $1,600,000 to $2,133,300 dividend into 21,333 shares of $100 each. The ore breasts of the south shaft show a decided improvement in the bottom, while the north shaft is yielding the usual amount of high grade ore. The suit between this company and the Rathburn has been settled by consolidation; a new issue of stock to be had, and the Rathburn stockholders taken in—one to three.—THE AURORA CONSOLIDATED Company has excavated a chamber in the Earl, which runs northerly from the shaft 50 feet, is 30 feet high and 30 feet wide, and south of the shaft the same chamber extends 50 feet, is 25 wide and 10 in height—and still no country rock has been found, while the ore is very rich, and all the waste taken from this vast chamber would not fill a single wagon-bed. A dike-fissure of about the same proportions and characteristics has been developed in the Aurora Consolidated proper.

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, November 12, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2½c ₱ lb.

Scotch and English Pig iron ₱ ton	$32 50	@	—
White Pig ₱ ton	30 00	@	32 00
Refined Bar, bad assortment, ₱ lb	— 03	@	—
Refined Bar, good assortment, ₱ lb	— 04	@	—
Boiler, No. 1 to 4	— 04½	@	—
Plate, No. 5 to 9	—	@	— 04½
Sheet, No. 10 to 13	— 04½	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5½
Sheet, No. 24 to 27	— 05	@	— 6½
COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb			
Sheathing, ₱ lb	—	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22
TIN PLATES.—Duty: 25 ₱ cent. ad valorem.			
Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— 40	@	— 42½
STEEL.—English Cast Steel, ₱ lb	—	@	— 18
QUICKSILVER.—₱ lb	— 55	@	— 60
LEAD.—Pig ₱ lb	— 7½	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
ZINC.—Sheets, ₱ lb	— 10½	@	— 11
BORAX.—California, ₱ lb	— 38	@	— 40

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

(Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.)

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Cons., Sierra co., Sept. 21, 50c	Oct. 25	Nov. 15
Bromide Tunnel, White Pine, Nov. 5, 20c	Dec. 9	Dec. 28
Bucklin, White Pine, Sept. 24, 5c	Nov. 10	Nov. 30
Belcher, Storey co., Oct. 21, $2.50	Nov. 22	Dec. 14
Crown Point, Storey co., Nov. 5, $7.50	Dec. 9	Dec. 28
California Slate, Oct. 15, $1	Nov. 15	Nov. 27
Cons. Virginia, Storey co., Oct. 1, $1.50	Nov. 4	Nov. 20
Coney, Amador co., Oct. 14, $5	Nov. 20	Dec. 13
California S. M., White Pine, Oct. 19, $1.50	Nov. 22	Dec. 13
Chicago and Detroit Cons, July 16, 50c	Dec. 4	Dec. 27
Californiada, White Pine, Oct. 19, $1.50	Nov. 22	Dec. 13
Daney, Lyon co., Nov. 4, $1	Nov. 15	Dec. 4
Empire M. & M. Co., Sept. 29, $25	Nov. 4	Nov. 24
Evening Star Cons., W. P., Oct. 19, $1	Dec. 1	Dec. 20
Geo. Washington, White Pine, Sept. 14, 10c	Oct. 18	Nov. 6
Hearst, White Pine, Sept. 15, 50c	Nov. 1	Nov. 22
Hungarvel, Nevada co., Sept. 20, $1	Oct. 25	Nov. 15
Julia, Virginia Dist., Oct. 15, 50c	Nov. 18	Dec. 6
La Bianca, Mexico, Nov. 5, $1	Dec. 4	Dec. 21
Maxwell, Amador co., Sept. 23, $1	Nov. 1	Nov. 24
Morning Star, Alpine co., $1.25, 5c	Nov. 15	Dec. 6
Meadow Valley, Lincoln co., Oct. 9, 25c	Nov. 11	Nov. 30
Manchester, Alpine co., July 16, 50c	Dec. 4	Dec. 27
Mammoth, White Pine, Oct. 28, 20c	Dec. 7	Dec. 28
Noonday, White Pine, Oct. 14, 30c	Nov. 18	Dec. 9
Osbor, Storey co., Oct. 25, $3	Dec. 2	Dec. 24
Oneida, Amador co., Oct. 5, $10	Nov. 10	Nov. 30
Rising Star, Idaho, Nov. 5, 50c	Dec. 18	Jan. 15
North American Cons., W. P., Sept. 27, 2½c	Nov. 25	Nov. 30
Rhyan, Alpine co., Sept. 16, 25c	Oct. 20	Nov. 10
Rathburn, White Pine, Oct. 26, 50c	Oct. 4	Dec. 22
Silver Star, White Pine, Nov. 2, 15c	Dec. 17	Jan. 3
San Joaquin & K. R. C. Co., Oct. 5, 10c	Nov. 8	Nov. 23
Segregated Belcher, Storey co., Oct. 23, $1	Nov. 23	Dec. 11
Taylor, El Dorado co., Aug. 25, 10c	Oct. 4	Nov. 22
Tecumseh, Calaveras co, $5	Nov. 17	Dec. 8
U. S. Grant, Nevada co., Sept. 21, 50c	Oct. 22	Nov. 13
White Pine Mutual, Sept. 29, 50c	Nov. 3	Nov. 22
Wells, White Pine, Aug. 10, 20c	Sept. 17	Nov. 15
Wheeler, Esmeralda co., Sept. 20, $1	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

Kentuck	Annual Meeting, Nov. 24.
Original Hidden Treasure	Meeting, Dec. 14.
Sacramento and Meredith	Annual Meeting, Nov. 13.

LATEST DIVIDENDO.

Amador Co., div. $6 per share	Payable Nov. 8, 1869
Alpha Cons, Storey co., Nev, div. $2	Pay. June 19, 1868
Bacon, Storey co., Nev., div	Payable June 19, 1868
Coney, preferred Stock, div. 1½ per cent	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12, 1868
Chollar-Potosi, div., $1	Payable Nov. 10, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Eureka, div. $7 50	Payable Nov. 8, 1869
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q. M. & M.—div. $7 50	Payable Jan 15, 1868
Golden Chariot, Idaho, div. $3	Payable June 15, 1869
Golden Rule, Tuolumne co., div. 50c ₱ sh	Pay. Oct. 26, 1869
Hale & Norcross, div. $6	Payable July 10, 1869
Ida Elmore, div. $1	Payable Nov. 10, 1869
Imperial, Storey co., Nev., div	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 1, 1869
Keystone, Sierra co., div., $32	Payable May 6, 1869
Kentuck, div., $20 per share	Payable Jan. 10, 1868
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Unassessable, div	Payable June 18, 1868
Sand Spring Salt, dividend $1	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec. 19, 1868
Savage, Virginia, Nev, dividend, $4	Payable May 11, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct. 10, 1869
Virginia & G. H. Water Co., Dividend, payable April 15, 1869	
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asked.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, November 12, 1869.

MISCELLANEOUS STOCKS.	*Bid.*	*Asked*
United States Bonds, 5-20s, 1865, '67, '68	$ —	—
United States Bonds, 5-20s, 1864	—	—
United States Bonds, 5-20s, 1862	—	—
Legal Tender Notes	73¾	—
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1851	par	& Int
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1861	100	—
San Francisco School Bonds, 10s, 1851	par	& Int.
San Francisco City and Co. Sch'l B'ds, 7s, 1866	89	90
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds, 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	65	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Butte County Bonds, 10s, 1869	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	46	50
State Telegraph Co	25	—
Spring Valley Water Co	—	62½
GAS COMPANIES.		
San Francisco Gas Co	86	—
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	70
Central Railroad	56	—
North Beach and Mission Railroad	67	68
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	96	98
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	91	94
Home Mutual Insurance Co	193½	200
Occidental Insurance Co	85	90
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	120	140
MINING STOCKS—WASHOE DISTRICT.		
Alpha	20	20½
Baltimore American	—	—
Belcher	14	14½
Bullion, G. H.	—	10
Crown Point	15	15¼
Gale (Va.)	—	—
Confidence	25	—
Consolidated Virginia	—	—
Chollar-Potosi	24½	25
Daney	1	1¼
Exchequer	10	11
Empire Mill and Mining Co	60	62
Gould & Curry	84½	85
Gold Hill Quartz	30	32
Hale & Norcross	184	185
Imperial	50	51
Julia	25	—
Justice and Independent	2¾	3
Kentuck	176	—
Lady Bryan	9¾	10
American	—	—
Occidental	16	16¼
Ophir	14	14¾
Overman	95	96
Segregated Belcher	8	8¾
Savage	65	67
Sierra Nevada	14	14½
Union	—	—
United States	—	—
Yellow Jacket	46¾	47
MISCELLANEOUS MINING STOCKS.		
Amador (California)	280	290
Aurora, White Pine	15½	16
Eureka, (California)	240	—
Golden Chariot (Idaho)	15	18
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, November 12 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 50
Do. Superfine	4 25	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 15	@	1 60
Oats, ₱ 100 lbs	1 15	@	1 45
Barley, ₱ 100 lbs	90	@	1 15
Beans, ₱ 100 lbs	2 50	@	3 50
Potatoes, ₱ 100 lbs	75	@	1 25
Hay, ₱ ton	8 00	@	16 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	6
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18½	@	19
Do. Rio	18½	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	50	@	70
Isthmus Butter, ₱ lb	30	@	42½
Cheese, California, ₱ lb	15	@	19
Eggs, ₱ dozen	50	@	90
Lard, ₱ lb	17	@	18
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	40	@	50
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	40	@	50
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	70	@	75
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	—	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	—
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	25	@	30
Soap, Pale and C. O.	—	@	12
Soap, Castile, ₱ lb	—	@	20

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. ANN FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING NOVEMBER 2d.

DOOR BUTT AND MARINE HINGE.—Charles H. Foster, Sau Francisco.

CARPET-BEATING MACHINE.—Loran Mincr, San Francisco.

UNITING ARTIFICIAL TEETH ON RUBBER BASES TO METALLIC PLATES.—E. K. Jenner, Healdsburg, Cal.

HORSE, HAY AND GRAIN FORKS.—E. W. Walton and A. J. Brown, Stockton, Cal.

SHAMPOOING APPARATUS.—Mark L. Winn, San Francisco.

BALE TIES LOCK.—J. Wheelock, San Francisco.

COPY-HOLDER FOR PRINTERS.—John S. Butler, Silver City, Idaho Territory.

GANG PLOW CULTIVATOR.—Henry P. McCleave, Tomales, Marin County, Cal.

POTATO DIGGER.—Yocom, Walker & Sharp, Arcata, Humboldt County, Cal.

CAR BRAKE.—Yocom & Cowan, Arcata, Humboldt County, Cal.

Refractory Ore from Meadow Valley.

Three tons of $2,000 to $6,000 ore from the Pioche mine, in Meadow Valley, Southern Nevada, somewhere near the Colorado river, has been brought to this city for metallurgical tests on a working scale, one batch to be smelted by Mr. Taylor at his metallurgical works near the City Gardens; another to be submitted to roasting and amalgamation by Varney on Third street; and a third batch to be tried in a modified amalgamation process by Mr. Nolf. To one of the parties interested—Mr. Wollcb—we are indebted for a specimen. It is an uurecognizable compound, mineralllogically, made up apparently of the sulphurets of silver, lead, and antimony; probably in large part of one of the dark antimonial sulphurets of silver. The color is iron grey; hardness of small surfaces—that of stephanite. There is a brick-colored oxide (of lead?) and quartz gangue.

The Superintendent of this mine is Mr. Hoffman, who has already erected smelting works—a cupola, furnace, etc.—the first bars from which are expected to arrive in this city in a few weeks.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Imperial Quarries.—We learn by letter that this tunnel was in 1,242 feet on Saturday, October 30th;—the month's progress being 79 feet.

Leviathan.—*Miner*, 30th: Prof. Rickard came up this week; with him a practical English copper smelter. The furnaces and machinery are on the way between Reno and this place, and will soon be erected.

High Grade Ore.—A sample from the Monitor C. M. Co's tunnel No. 3, running in upon the south continuation of the Tarshish ore deposit, was sent to Sacramento a few days since, and assays resulted as follows: Gold, per ton, $75.24; silver, per ton, $926.79; total value, per ton, $1,002.03.

Assessments have been levied upon the Manchester Co., and the Chicago & Detroit Consolidated. The claims are half a mile below town and opposite the Tarshish deposit.

AMADOR COUNTY.

Wolverine.—*Ledger*, Nov. 6th: This mine, the first north of the Eureka, at Sutter Creek, is now being worked successfully. They have a vein of rock, two feet wide, which is rich.

Coney.—We learn that arrangements are making whereby work will soon be commenced at the Coney mine.

CALAVERAS COUNTY.

Palomo.—*Chronicle*, 6th: There was exhibited in town on Wednesday, from this mine, some of the richest rock it has ever been our fortune to look upon. Some pieces are gold with a little rock clinging to them; one of the largest weighed 25 ounces. The rock was taken from the 200-foot level, 250 feet from the shaft. The vein at this point is 10 feet in width. The shaft has attained the depth of 250 ft. from the surface.

Alexander & Co.—The mill is kept in constant operation, with good rock. The new hoisting works are in operation, and are considered model in efficiency and workmanship.

West Point.—Cor. of same: "Mining in this district is confined entirely to quartz. Among the promiuent leads now being worked, is the Zacetara, owned by a San Francisco company. This vein has been worked for years, always paying largely. Adjoining is the claim of Doyle & Morse, who are now working their first crushing; it is said to be rich. (We have since learned that it paid $70 per ton.—*Ed. Chronicle.)* On the road from this mine to West Point is located the claim of Trainor & Co. This is an excellent claim, and they are at present taking out rich rock. To the south of this is the claim of Black & Allstein, a large vein, and rich rock. The Fisher & Schmidt mill is being reconstructed. Mr. Thoss, the celebrated sulphuret worker, has purchased an interest in the property, and is building in accordance with his views of working rock. The machinery is to consist of a crusher of the alligator pattern, with rollers for subsequent reduction and one of Thoss' arastras for amalgamation, The mill will be completed by the first of December. In Sandy Gulch, one mile above, mining at present is very dull, although Harris' mill is playing a merry tune on $40 rock. This mill has run very steady during the past season on rock brought from long distances, as they have an excellent reputation for close working,

LOS ANGELES COUNTY.

Soledad.—Telegram of 6th: Hamilton, of the Star Eureka mine, reports 140 ozs. of silver as the proceeds of eight days run.

MARIPOSA COUNTY.

Rich Quartz.—*Gazette* 5th: Mr. Cassell, Superintendent of the "Oakes & Reese" mine in Hunter's Valley, has shown us some specimens which we have rarely seen excelled. Mr. C. informs us that they are constantly taking out rock of extraordinary richness, and that the indications are favorable for a long continuance of successful operations.

MONO COUNTY.

Dunderberg.—Correspondent of Stockton *Independent:* The tunnel of this mine, owned by the Wurtemburg Company, extends six hundred feet into the mountain, and at its terminus is two hundred feet in perpendicular height from the surface. This company has been steadily at work for two years, and now think they have reached the casing of the ledge, which is twenty feet wide and has been traced for more than a mile. Before commencing their tunnel the company sunk a shaft on the lode to the depth of 40 feet and the rock yielded at the rate of $52 per ton. * * Since writing the above, I am informed that the tunnel has reached the lode, and the indications are good.

NEVADA COUNTY.

McClellan.—Grass Valley *Union*, Nov. 2d: The incline at this mine is down 127 feet, the ledge being large and bearing metal in great quantity. When the shaft gets down to 150 feet, a drift will be run, and rock taken out for milling.

North Star.—Same of 4th: The new 16-inch pump was started up yesterday, and works beautifully, discharging 16,000 gallons per minute. The North Star will not be troubled with water this winter. The batteries will be at work crushing within four days. While the new pump was being put in place, the whole mill and works were put in the best repair.

Pay Week.—Several of the leading mines of Grass Valley pay off this week, and by Saturday night over $30,000 will be put in circulation. There never was a time in the history of this town when more men were employed and when their pay was more certain than now.

West Eureka.—Same of 7th: This company is putting down an incline on their ledge, west of the Nevada road. At the depth of 20 feet the ledge is showing well in sulphurets, and the encasing walls are becoming clearly defined.

Gold Bricks.—Same of 9th: We saw yesterday at Findley's a brick from the Union Hill mine, which was valued at $6,500, making the clean-up for the month over $11,000. The Idaho sent in two bricks, worth over $9,000, and two or three outside mines, pitched in together, gave a brick worth $2,700.

Good Rock.—The Empire Co., last Saturday, found some of the richest rock which has ever been taken out in Grass Valley District. For some two or three weeks the Empire has been showing well; but on Saturday last the show became magnificent. Specimens which do the eyes good to look at were taken out.

Vigilance.—*Transcript*, 3d: This claim, near Cleaveland's ranch, promises well. They have a 6-foot ledge, and 300 tons of rock out. They are putting up a new mill, in which the power is applied directly to the stamps, each stem being an independent piston. It is thought that the mill will be ready for work in 10 days.

Fidelity.—Same of 4th: The Co. have run their tunnel 162 feet, and have a fine ledge, showing free gold and rich sulphurets. This claim is on the Yuba, above Washington.

North Bloomfield Gravel Mining Co. Same of 5th: The dam of the reservoir at Bowman's will be completed to the 44-foot level in four days. They will then put in a new set of timbers, which will raise the reservoir to 65 feet. This dam is constructed of substantial timbers and hallasted with granite. The company propose to commence next summer below and build one of solid masonry, which work will be completed in five years.

New Bavarian.—This ledge is one mile below Rush creek. We have been shown specimens of rock, which are filled with sulphurets and free gold. Rock which H. Myer took to Sacramento assayed $2,000 to the ton in gold. Peter Kuhn has prospected the ledge 300 feet.

Mill Burned.—Same of 6th: The French quartz mill, owned by Pioche & Co., situated beyond Canada Hill, was totally destroyed by fire on Thursday night. It was undoubtedly the work of an incendiary. The mill had six stamps, a steam engine and turbine wheel. It has not been used for some time. The loss is about $5,000.

Selling Out.—A portion of the personal property belonging to the "monstrous failure," the French sulphuret works at Canada Hill, was sold by the Sheriff yesterday, and the monster cylinder, which cost $1,200 for transportation from San Francisco, will be sold under another judgment to-day. These works cost over $80,000.

PLUMAS COUNTY.

Argentina.—Quincy *National*, Oct. 30th: Heath & Co. have got their flume completed, and have been sluicing for some time. Their claim pays, on an average, an ounce per day to the man. Several other companies are at work in the same neighborhood, and are making good wages.

Mill Creek.—Barker, Bradley & Co. are making 5 or $6 per day to the man. Jack Gleason is opening a claim higher up on Mill Creek.

Clermont Hill.—Siler & Myers have got their timbers, etc., ready, and are driving their tunnel ahead.

Hungarian Hill.—Kelly & Co. have taken out good pay for their summer's work, but have not worked much ground. A new company have made arrangements to work a claim in the vicinity of the old Five Points, near Rock Creek.

Black Hawk.—The miners are not at work at present, but have got their claims in readiness for the approaching water season. A company has been formed to work a quartz lode which crops out near the head of Betsy Gulch.

SISKIYOU COUNTY.

Salmon.—Yreka *Union*, 6th: We learn that the quartz star is in the ascendant. The Black Bear Co. are working rock that pays $40 to the ton; the old Union Mill, now the Klamath, is being overhauled, and enlarged; the present company are satisfied that they have plenty of good rock. Another ledge has been discovered near the Klamath, and Parsons & Co. intend to erect a mill on it. The ledge is three feet thick, well defined, and full of gold. Another recent discovery, on Jackass Gulch, is spoken of as promising finely.

TUOLUMNE COUNTY.

Fairview.—Sonora *Democrat*, Nov. 6th: John Bacon has shown us several chispas taken out of this claim, which is on the Stanislaus River, near Ahby's Ferry. The owners have run a tunnel in the mountains and found gravel. Last week they washed five cart loads, and obtained $160 of coarse gold, the largest piece weighing $45.

Arizona.

From Wickenburg.—Prescott *Miner*, Oct. 23d: Persons lately from our sister town speak in glowing terms of the Vulture mine. Messrs. Hargrave, Hardy and Knott assure us that it is getting bigger and richer. The Vulture Co's mill now consists of 40 stamps, which are kept constantly at work. The other mill was running but five stamps. Rock was getting scarce at the mill, owing to the fact that the Indians stole mules from Ariola; but as Beach's train had just arrived, the mill will be kept running.

Big Bug.—On Sunday, the Co. purchased a large wagon and 10 mules. Next morning it was loaded with lumber and supplies for the mill, and started, escorted by several miners, who are by this time at work. The mill is running and paying.

Hassayampa.—Scarcely a day passes that a party of prospectors does not pass on their way to Hassayampa. The present is a good time to go to the bed-rock in the creeks and gulches. Lynk Creek, Big Bug, the Hassayampa, Black Cañon, and their tributaries, all contain gold.

Colorado.

Consolidated Gregory.—*Herald*, Oct. 20th: Work is progressing favorably. About four cords of ore is raised to the surface every 24 hours. The solid iron ore is saved for Hill's works. The mine is 420 feet deep, and most of the work is being done in the east end.

Coaley.—The lode seems to increase in richness as work progresses. The ore last week yielded from 25 to 30 ounces more of silver than any time previous.

More Silver Discovered.—In Grand Island District, George Lytle and William Martin made a discovery four weeks ago which has been worked for silver ever since, with first rate results. It is not named yet. Sixteen tons have been sold to Prof. Hill for $930. The whole ore vein, four feet wide, was taken without sorting. It took two men eight days to take the ore out.

Empire.—Mining is rather brisk. The Peck mill, 12 stamps, is crushing surface ore. On the discovery of the Conqueror lode they have reached a depth of 285 feet. Don C. Daily and R. W. Taylor are working the National, a new lode recently discovered. The crevice is wide and the quartz looks well, David Ball has started the Tennessee mill on National ore. Dr. Munson is repairing the Knickerbocker mill. He will run 12 stamps, and has rented eight to Dr. Roe, of Syracuse, New York, who proposes to introduce a lightning process. He says his process has been tested in California and in Canada, and has proved entirely successful. His machinery will be on the ground in a day or two.

Brigg's Mill.—This has been recently refitted throughout, and may now be considered a model mill. 25 new stamps are at work. The old stamps, 800 lbs., have been replaced with new ones, which are called 500 lbs.

Gold Dirt.—Boulder *News*, Nov. 2d: Capt. Austin informs us that he is operating on surface ores from the Austin lode. He employs six hands, and proposes working four more soon. He will work his ores next spring in the 50-stamp mill at Rollinsville.

Alph. Wright, of Boulder, saw a Mr. Beaver at Central recently wash $23 in gold from a single pan of dirt out of the Ben. Holliday lode.

Items.—Central City *Register*, Oct. 28th: We were shown yesterday by Alexander Cameron an assay of ore from Chicago Creek, which gave $495.82, coin....Albert Johnson is sinking on the Major Anderson lode, Georgetown. In going down 25 feet he took out 10 tons of ore, that yielded by amalgamation $121 per ton, silver....Mr. Bradley is tearing out the portable engine in his mill in Russell's Gulch, and is putting in a stationary one....Four bars of silver bullion, worth $10,000, passed through town yesterday, en route for the East by express. They are from the Georgetown Smelting Works....The present storm will put an end to gulch mining in Colorado for this season.

Lake County.—A couple of men have discovered a lode at the head of California Gulch, with a dirt crevice, from which they are taking out 50 ozs. of gold per week by buddling. Prospects from this discovery have panned as high as $125. Gulch mining stopped about the 1st, for lack of water, which froze up. The Five-Twenty lode is paying largely.

Conqueror.—Georgetown *Miner*, Oct. 28th: Jerry Haskins, one of the owners of the Conqueror mine at Empire, informe us that on Friday they got through the "cap," and now have a fine body of solid iron. The shaft is 290 feet in depth.

Bricks.—L. Huepedeu & Co. have shipped, since our last issue, three bricks of silver, two from Equator ore, one weighing 1,500.20 ozs., .795 fine, coin value $1,542.06, and the other 1.575 ozs., .837 fine, coin value $1,704.46, being of greater value than any one brick ever before produced here by amalgamation. The third one was from Cascade ore, and weighed 190.90 ozs., .937 fine, coin value $231.28. The total number of ounces is 3,266.10, coin value $3,477.80.

Baker Co.—Monday we saw a button of silver bullion, belonging to the Baker Co., refined at the Baker Co's works, weighing 1,815.08 troy ozs., coin value $2,178.09.

Equator.—The main shaft is now 265 feet in depth, and just coming into a fine body of ore. The engine, boiler and hoisting machinery for shaft No. 3, east, is soon expected.

The Brown Co. shipped, on Monday last, 517 lbs. troy, or 6,204 ozs., of silver bullion; coin value, $8,375.40; currency value, $10,888.02.

Park County.—Ypsilanti lode, Hall Gulch, shows in the cut a 12-foot fissure vein. Assays from this and several other lodes show well; the Madagascar as high as $400 to the ton.

Tunnel Enterprises.—This is the true method of mining in Clear Creek county, and it has fairly been inaugurated. Work is being vigorously prosecuted on no less than six tunnels. Dr. Kane, of Ohio, has organized the Helmick Tunnel Co., for the purpose of developing the great belt of silver-bearing lodes on Leavenworth Mountain. The depth from the surface to the floor of the tunnel is 1,240 feet, and its whole length 4,000 feet. Some 15 lodes will be cut on the north face of the mountain, and on the south as many as 18.

Idaho.

Flint.—*Avalanche*, Oct. 30th: This district continues dull, but some prospecting is being done, and we are firm in the belief that good mines will yet be developed. Fred. Warnkee has just returned from Chicago, in company with a gentleman who has come as the representative of some capitalists.

Keystone—First South.—This mine, in Long Gulch, has been prospected by a shaft seven feet deep. Several veins have been developed, which show rich rock. Messrs. Purdy, Sayres, and Hosea Eastman, the principal owners, intend to prosecute its development.

Mines.—We visited the Ida Elmore and Golden Chariot a few days ago. The above ground works of both these mine are in splendid working order, and everything looked lively.

Water Ditch.—The water ditch owned by Purdy, Angell, Stevens, Miles and others, is to be completed in about a week. It runs from the head of Long Gulch to the placer claime in Black Rock Gulch, on Florida Mountain. It will be, when completed, three miles long, two and a half feet at the bottom, and 14 inches deep at the lower side, with a grade of one-half inch to the rod. Capt. Tedford and others are running a ditch to the same placers, from the head of Jordan Creek.

Loon Creek.—Oro Grande cor. of *Statesman*, Oct. 30th: Our camp is getting dull. At a meeting last week, called for

the purpose of laying over claims, the committee which was appointed reported resolutions, requiring all bona-fide claim holders to come forward before the Recordor and have their claims filed within six days. But they were voted down, and a motion adopted by which all the ground in the district was laid over just as it stood on the record. Thus there is no chance for an outsider to possess himself of a mining claim unless he buys, and that at high figures. This action will be the means of retarding development of this part of Idaho.

Yellow Jacket is likely to prove worth something after all. A very rich quartz ledge, gold-bearing, is reported to have been discovered.

Reports are in circulation that a new discovery has been made within a distance of 10 or 15 miles of Ore Grande, and the evidences are such as to lead me to believe the truth thereof.

Nevada.

COPE DISTRICT.

MORE ORE.—Elko *Independent*, Nov. 3d: Eighteen hundred pounds of ore, from the Monntain City mine, was shipped to San Francisco yesterday. This lot is said to be a fair average, and was selected for a working test. Six tons from the Argenta reached this place on Monday for shipment.

MOUNTAIN CITY.—Cor. of same: The machinery for the Drew & Atchison mill has arrived in perfect order. The boiler and engine are in position; the building is covered in; all the lumber is on the ground; and every thing looks better than the most sanguine had anticipated. Uncle John Atchison informs me that in order to have all the machinery in perfect order he will not start up before the 1st of December. Messrs. Delbanco & Buneman, have shipped during the past 10 days, 14 tons of Argenta rock; of Hamilton, 2¼ tons; Belle of the West, 5 tons. Thos. Lynch has shipped 4 tons of selected rock from various ledges; making in all 25¼ tons. The Eudora, on Argenta Hill, have run a tunnel 53 feet already, and intend running it 1,200 this winter if possible. There is every indication of striking it very rich. The Argenta Company are taking out an average of three tons per day. As they go down, the ledge is getting wider and the rock is richer than heretofore. The Hamilton is improving greatly.

NEW DISCOVERY.—Same of 6th: Fred Hafford has shown us some ore from the Rainbow ledge, in Railroad district, that is astonishingly rich in bromide of silver. Several pieces were burned in a blacksmith's forge and became perfectly coated with silver. The ledge is said to be quite large.

NEW MILL.—Wm. S. Canty has returned from San Francisco, where he has been arranging for a mill, which will arrive in a few days.

BALD MOUNTAIN.—Advices are encouraging. John Foreman is taking out ore for shipment. Dr. Bailey is reported to have made two valuable discoveries within the last three weeks. One is an antimonial silver vein, of three feet in width, and the other a galena ledge, containing silver in paying quantities on the croppings. Wood is said to abound, and smelting furnaces can be erected with but little cost.

ESMERALDA.

WALKER RIVER.—Gold Hill *News*, Nov. 3d: Garrard's smelting works, half way between Fort Churchill and Pine Grove, are a perfect success, smelting at the rate of seven or eight tons of ore per day. It yields 20 per cent. of copper with $6 of silver to the ton. The mine has been worked to the depth of 100 feet, and the ledge averages six feet in width.

HUMBOLDT.

UNIONVILLE.—Cor. of *Independent*, Nov. 3d: I made a visit to the Arizona lode this week. Starting in on the main level, the first 250 feet is in the tunnel of Jno. C. Fall, at the south end of which we reach the Silver mining ground. The course of the ledge from this point is south, and the Silver has followed it 250 feet, taking out the ledge as they progressed, which will average the whole distance not less than seven feet in thickness, not a pound of which but will pay for working. The ore is sorted and the best sent to England. Mr. Steward shipped 30 tons this month, most of which was worth $800 per ton, while his mill is kept constantly at work on lower grades. The Silver Mining cleared in the month of September $12,000 over and above expenses, which paid off all the debts of the company, and this month will clear about $15,000, which will yield a dividend of about $12 per foot, The yield of Fall's mine is about the same. The developments of the Arizona have had a wonderful effect in stimulating others to persevere and have started an army of active prospectors over the mountains. The De Soto Company, in Star district, has levied an assessment of $2 a share, and intends going to work with renewed vigor in the spring. Gen. Weaver and Geo. Lovelock have made a famous discovery on the summit of the mountain. The ore is of a dark brown color, considerably decomposed. Several tests have been made by working process, yielding from $35 to $60 per ton. The lode is said to be 20 feet in width, cropping out for a long distance on the surface of the ground.

OREANA.—*Independent*, 6th: Mr. Davis, the Supt. of the Utica mill, has furnished it with all the latest improvements, and is now prepared for custom work on a large scale.

Oreana is again looking up. Several new companies are at work in the district. The Savannah and Galena ledges are turning out handsomely. The ore taken out is being shipped to San Francisco, and yields a good profit. The furnaces, which are the most extensive in the State, are idle, but there is a prospect that work will be resumed.

The Alpha mine, a few miles above Oreana, is regarded as a "big thing." It is owned by an English company, who have extensive reduction works at Reno, and are shipping large quantities of ore. An advance of $500 per ton is obtained for first class ore from shipping houses in San Francisco. The mine at present is yielding 10 tons of ore per day, about equally divided between first and second class ore.

G. W. Carmany & Co. are opening the first extension south, with flattering prospects. Work is being done on several other claims along the Alpha belt.

RAILROAD DISTRICT.—The Humboldt vein is a large one of gray copper ore, which assays in silver $40 to $70 per ton, and yields 40 per cent. of copper. A telegram of the 5th reports the Nevada mine as sold. The purchasers will ship ore to England.

PAHRANAGAT.

HIKO.—Cor. of *Reveille*, 6th: The Illinois and Indiana mines are both on the great Hiko lode. The thickness of the vein longitudinally, a distance of 10,000 feet, will average 20 feet. The company own 26,000 feet. The vein throws out spurs that in other districts would be called mines; many of them have large masses of high grade ores easily extracted.

A large quantity of ore is being taken from the mines, of which we are working about 12 tons daily, averaging $100 per ton. The whole vein matter would average from $50 to $70 per ton, and can be worked by wet process, arrangements for which are being made. The mill is at Hiko, 12 miles from the mines, and has a capacity of 10 stamps, five furnaces and eight pans. An artesian well is under construction at the end of the tramway, 1,500 feet from the main workings, where reduction works will be erected.

REESE RIVER.

ANOTHER MINE OPENED.—*Reveille*, Nov. 1st: The Isabella mine on Lander Hill, which has been closed for a long time, was opened on Saturday by a party that will work it under a lease. In the early days the Isabella produced remarkable rich chloride ore.

TO BE DEEPENED.—We understand a contract is to be let to sink the shaft of the Lane and Fuller Co. 50 feet.

TROJAN.—The shaft is to be sunk 100 ft. at $10 per foot, the mine to furnish the timbers, hoisting power, materials and tools. It will be observed that the contract price is extremely low, which may be put down to the score of single-handed drilling and giant powder.

BULLION FOR THE QUARTER.—The product of Lauder county for the quarter ending Sept. 30th, was 1,762 tons 973 pounds. The value amounts to $253,197.60, which is an average of $139.21 per ton.

WORKS COMPLETED.—Same of 4th: The hoisting works of the Toiyabe Co., on Lander Hill, were set in motion on Monday. They are estimated to be powerful enough to sink the shaft of the company 1,000 feet, unless the volume of water should largely increase.

WASHINGTON DISTRICT.—We heard this morning that an important strike of good ore had been made in the mines of the Utica and Herkimer Co.

MANHATTAN.—Same of 5th: The mill of the company will be opened for work next Monday. Its repairs will be complete and thorough.

MINERAL HILL.—*Enterprise*, 4th: Charley McWilliams has returned from Mineral Hill. He says the mines are the richest he has seen in the country. The Mineral Hill, the principal lead, is nearly 50 feet in width, and yields ore which by mill process pays from $300 to $1,000 per ton. There are many promising leads. The present population of the district is about 250. The deepest shaft is not down over 30 feet, but as depth is attained the leads show increase of metal. There is plenty of wood and water—wood selling at $4 per cord.

WASHOE.

SIERRA NEVADA.—Gold Hill *News*, Nov. 6th: The winze below the car track level is completed to the depth of 100 feet, and a drift from the bottom commenced, which will cut that rich lodge of white ore 50 feet deeper. The drift above continues to look well.

IMPERIAL-EMPIRE.—The shaft is 1,160 feet. Drifting south at the 1,080-foot level, towards the Holmes ground, resumed last Monday. The drift is 156 feet in length from the shaft, and has about 105 feet yet to run. The old upper workings are yielding 45 or 50 tons per day.

OPHIR.—Nothing new in the lower drifts, except water, of which a rush during the last forty-eight hours has drowned out all mining. Notwithstanding all efforts the water has raised in the shafts to the height of 300 feet. The prospect of progress in either of the drifts, during the next six weeks, is not good.

YELLOW JACKET.—The mine is yielding 165 tons per day, principally from the 900-foot level of the north mine. The connection between the 800 and 700-foot levels will probably be completed to-day.

OCCIDENTAL.—The face of the lower tunnel still promises well. The old mine never looked better. A general survey is being made for the first time.

VIRGINIA CONSOLIDATED.—The new shaft is 393 feet deep to-day. They are making over two feet a day; although the rock is considerably harder than it was, it blasts well.

SAVAGE.—Thirty feet above the track floor, in a winze, they have drifted north 15 feet in a body of excellent ore, over 10 feet in width, which will mill $33 per ton.

LADY BRYAN.—The station at the bottom of the shaft, 172 feet from the surface, is completed, and the sinking of the incline commenced. The main south drift at the 80-foot level shows plenty of excellent pay ore in the south end.

HALE & NORCROSS.—Drifting north and south is still progressing at the sixth. The average yield is 150 tons per day.

GOULD & CURRY.—A small stream of water in the south drift, at the 7th level. The old mine is yielding about the same.

CHOLLAR-POTOSI.—Yielding 160 tons of $40 ore per day. The breasts and stopes of the Blue Wing sections are looking a little better.

ALPHA.—The drift north, from the 1,080-foot level of the Imperial, is in 80 feet.

OVERMAN.—Yielding a little less than 100 tons of ore per day.

SUTRO TUNNEL.—*Enterprise*, 7th: The tunnel was in 88 feet last evening—that is, the "leader," which is being driven in advance of the main work. The ground is still a mixture of clay and boulders.

A Virginia telegram of the 9th says: Work has been resumed on the old Monte Christo mine, untouched four or five years.

WHITE PINE.

WEEKLY MINING REVIEW.—*Empire*, 7th: The situation has steadily improved, and our mines are shipping to mill a larger amount of ore than at any time since the discovery of the district. It is true, our bullion shipments are not quite as large as a few months ago, when nothing but first-class ore was worked. When, owing to the scarcity of stamps, miners could get but a few tons of ore milled, they selected it with great care, and as a rule, nothing was shipped that would not yield above $75 per ton. Now, however, we have more mills, the cost of reduction is less than formerly, and but little attention is paid to assorting ore. This of course reduces the general average of the yield, which, for all the mines of the district, will probably not exceed $65 or $70 per ton the present quarter, as against $99.98 per ton for the last. The supply of ore on dump at most of the mills, together with the shipment from the mines during the next month or six weeks, will be abundantly sufficient to keep all of the stamps in constant operation through the winter.

BULLION.—*Empire*: Our bullion shipments for the week amount to $64,119.45 against $53,687.20 last week, an increase of $10,432.25. The largest shipment ever made from the District in a single week occurred in July last, amounting to $76,538.17, or but $12,418.72 more than our shipment for the past week. The *News* of 6th says: Bullion shipments for the week ending yesterday, $51,770.15—an increase of $11,196.43 over the shipment for last week.

MILLS AND FURNACES.—*Empire*: Thirty new stamps have been set in motion during the week—the Dayton 20 stamps, and the Mineral City mill, Robinson District, 10. The little crusher at Patterson, having been provided with stamps, also steamed up anew on Friday. Two additional mills are to be completed before the holidays—the Chicago mill from Elko, and that of Barton & Co., to be built on Treasure Hill. They will carry ten stamps each.

The base metal interest continues to prosper, though a few of the smaller draft furnaces have been out of repair during the week, and in consequence idle. The Nevada Mining and Bullion Company, with a capital stock of $100,000, to operate chiefly in base metal ores and bullion, filed its article of incorporation here the first of the week.

BOREALIS.—*News:* One particularly important strike has been made during the week—that of the Borealis mine. It is important in showing that the large body of rich ore in the Earl is continuous from the Aurora South across the head of Chloride and Bromide Flats, more than 3,000 feet, and renders the theory plausible that the same body continues unbroken to the flat west of the Hidden Treasure mine—about half a mile.

ITEMS.—*News:* Aurora Consolidated yields 80 ton per day....Auburn is taking out good ore from the 60-foot level. Sixty tons on the dumps....Consolidated Chloride Flat mills 62 tons per day....Charles and Theresa sent 40 tons to mill yesterday. Very rich ore was struck on Thursday, and four sacks of horn silver selected from it. ....Doran has been sold in New York, with the Little Treasure mill, for $40,000 ....Eberhardt is working an increased number of men on the Keystone surface ....Ore in Hidden Treasure, south shaft, improves. Suit with Rathburn settled by consolidation....Mammoth has compromised with Republic....Noonday has 100 tons out, and is sending to mill....Pogonip & Othello vein is 67 feet wide....*Empire* says Tom Paine has a magnificent supply of ore in sight....Rip Van Winkle sent eight tons to Mosheimer's smelting works. ....Miners' Dream down 30 feet, and has large lot of ore on dump....Brooks vs. Merced case in District Court still on trial. ....Upton has sold to Chicago parties the Challenge and two other mines for $300,000. Several other sales are mentioned at the figures given.

THE EMERSLEY.—The Pure Metal mine, Hot Creek, which was bonded to J. D. Emersley for $10,000, was sold by him in Chicago, subject to the report of experts to go on immediately. They went; and saw; and paid. The Co. has leased the Old Dominion mill, and expect to roll out bullion in a few days.

OUTSIDE DISTRICTS.—*Empire* gives a list of about 40 districts in Eastern Nevada, and says there is not one which does not show well, all things considered. Silver Park, a new district, 100 miles east of Hamilton, promises to be a rival of Treasure Hill. Some of the ore is scarcely distinguishable from the best Eberhardt. A hundred claims have been taken up.

THE SMALLEST STEAM ENGINE YET.—The Newburyport *Herald* says that W. J. Trafton, who built the little steam engine "Fairy Queen," will, during the winter, complete another, which will be made from a silver half dollar, and with boiler and all complete will be placed under a glass case one inch and an eighth in height by three-quarters of an inch in diameter. The dimensions will be as follows: Diameter of cylinder, 1-16 of an inch; stroke 5-32; diameter of wheel, 5-16; steam pipe, 1-32 (about the size of a common knitting needle). The boiler will have two minute gauges, and will hold about eight drops of water; and it is expected that four drops generated into steam will be sufficient to run it several minutes. The parts being so small will be obliged to be made with a powerful magnifying glass.

ENGLISH MINERS' UNION.—There is a miners' union in Great Britain numbering 60,000 men. Its President, Alexander McDonald, is now, or was recently, in this State, for the purpose of examining into the opportunities it offers for English mining emigrants.

NITRO-GLYCERINE.—An average of 4,000 pounds of nitro-glycerine have been used during each month for the past three years at the Hoosac Tunnel.

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W. B. EWER.....SENIOR EDITOR.

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San Francisco:
Saturday Morning, Nov. 13, 1869.

Tunneling in Alpine County.

Within a radius of half a mile around Mt. Bullion, Alpine County, there are three great mining undertakings in progress: the Monitor Consolidated, the Imperial Silver Quarries, and the Mt. Bullion Companies' Tunnels. The latter is on the west bank of Carson river, and is designed to cut the Union, Duke of Wellington, Washington, Rosecranz, Eastern Slope, Mt. Bullion, Star of the West, Red, White and Blue, and Highland Mary lodes; the company owning 1,800 feet of water front on the river, and a water-power of twenty-eight foot fall and 3,000 to 4,000 inches at low water. English capital is doing the work. Three shifts of men working by contract accomplish about sixty feet per month. The tunnel is nearly parallel to that of the Imperial Company, and cuts nearly the same lodes, both getting into the remarkable Tarshish ore formation. So much capital invested to open these lodes, by two separate companies, indicates that careful examination has resulted in giving promise of great rewards. The best specimens of silver-glance in this country hail from Alpine County.

WASHINGTON MINING COMPANY, FRENCH GULCH, SHASTA COUNTY.—From Superintendent John Souter we are in receipt of two specimens; one containing auriferous iron pyrites, galena and zinchlende, in quartz; the other, native gold associated with sulphate of baryta, or heavy spar, in quartz bands, that alternate with other black bands composed in a smaller degree of quartz, but in the main of a coal-black mineral, which in hardness, glance, structure, and probably in composition, resembles chlorite, containing also iron pyrites.

THE STANDISH STEAM PLOW.—An interesting notice of the late performance of this plow at Petaluma will be found under the agricultural head of the present issue. We have a sack full of the adobe soil in which it was operated, the lumps of which are so hard that a nail can be driven by them, as with a stone. There is no other plow in the world which could possibly be made to break up such a soil.

DRAWING.—Burgess' System of National Drawing embraces sets Nos. 1, 2, 3 and 4, of six cards each, with brief explanations, costing 40 cents per set. Set five contains eight cards and a pamphlet on perspective drawing, price 50 cents.

Fortieth Parallel Geological Survey.

From J. D. Hague, Esq., one of the members of Mr. King's party, who has been in San Francisco during the past week, we learn that the field work undertaken in behalf of this survey has been entirely completed, and the office work, which is to be carried on at Washington, will be brought to as speedy a completion as the nature of the work will permit; the appropriations made at the last session of Congress being sufficient to defray the necessary expenses, to the complete finishing of everything, including the publication of the three large octavo volumes proposed to contain the results, besides two large atlasses, of a size between that of the *Bulletin* and the Sacramento *Union*.

The first volume to be issued will probably appear early next spring. Owing to the lateness of the date of the appropriation last session, Mr. King was induced to defer publication until the several volumes could be brought under way together, and issued without further interference. The one first issued will be the most important—on Mining—embracing everything from Virginia City, Nevada, to Central City, Colorado, and will be accompanied by a large and fine atlas, very well executed and costly. The second volume to be issued will be on the Geology of the region surveyed, embracing its physical features and resources. The last volume will contain the Botanical and Zoölogical notes, and will also be accompanied by an atlas. Each of the volumes will be liberally illustrated, with a view to making the facts and generalizations presented the more comprehensible, popular, and generally useful to those for whose benefit the survey was intended.

So quiet and evasive of public notice has been the course of all connected with this survey, from its inception, that the circumstance has been the subject of remark. Yet from what we know of the working capacities and of the industry displayed by the gentleman in charge, we are very confident that the results will be highly appreciated. The field has been a splendid one, for the ambition of young men desirous of winning a good name and public favor, no less than for the real economical value of such a pointing out of the resources and features of the important domain in question, now opened up to the nation and to the world by the transcontinental railroad. The survey is in response to a real demand for fundamental facts and knowledge on the subject of our new national industry of mining and reducing the ores of silver in combination with gold. Mr. King's party has had the benefit of all the maps and results of the U. S. Pacific Railroad Exploration and Surveying Expeditions, in which there is an immense amount of information that could be made of practical account in the pursuits of mining; and they are all men practically and scientifically thorough in the several specialties assigned to them in the work. The names of the principal members, so far as we know them, are Messrs. King, the two Hagues, Simmons and Stretch. The survey is a national affair, as the matter is one of national importance. Touching the value of reports of this kind, we are frequently enlightened, by individuals who have no use for them; but amongst all well informed and well-read economists, themselves of the working school, the testimony in their favor is most enthusiastic. If we desire reliable information in regard to the resources, conditions, the physical geography and salient features of any new State, we inquire of the librarian for the Geological Survey; and thus it is the world over.

AN important article to millmen and mine owners generally will be found on our second page, giving facts, methods and figures touching milling and out-bringing in Colorado.

Agricultural Fairs—The Fair at Chico.

One of the most hopeful indications of progress and improvement in the agricultural industry of this coast is the increasing interest manifested in the local district Fairs, which are held every fall, in various sections of the State. It is very seldom that any special effort in improvement is made in any direction, except where something of a spirit of rivalry is introduced. No better plan to effect such a result has ever been devised than the institution of Fairs. It is mainly to these modern devices that the world is indebted for the wonderful progress which has been made, within the last sixty or seventy years, in the various branches of the mechanic arts, manufactures and agriculture. They cost time and money, it is true, and of themselves, directly, produce nothing; yet they are wonderful incentives to industry, enterprise and excellence. No money pays a better interest than that invested in Fairs. They should be encouraged by all classes of citizens, and legislative appropriations may always and with propriety be invoked in their aid.

The demand upon our columns by the late and long continued Mechanics' Fair in this city, has prevented us from doing anything like justice to the various local Fairs which took place during the continuance of the San Francisco Exhibition. We have before us some notes furnished by a correspondent from the Chico Fair, which should have been attended to at an earlier date, and at a time when the existing interest of that Exhibition would have warranted a more full mention of it. This Fair commenced on the 28th of September and closed October 2d. The district of country represented there was the entire Upper Sacramento Valley. The President of the Association is General John Bidwell, who delivered a very interesting and instructive address at the opening. The General takes a great interest in agriculture, and is a very energetic and public-spirited gentleman in all public matters. The Exhibition Hall stands upon a lot of land donated to the Society by him. The Fair was a grand success. The stock grounds were full, and made a fine show. The city was crowded with visitors, from Plumas and the adjoining counties. Many strangers from a distance were also present. In addition to the regular tickets of admission, $3,500 was taken in life memberships at $25 each.

The hall was finely decorated with flags, mottoes, etc. Upon the right were the words, "Arts, Science and Manufactures;" upon the left, "Agriculture, Horticulture and Commerce;" over the speaker's stand was emblazoned "Speed the Plow." There was a fine band of music in attendance, and the "Agricultural Choir" sang some beautiful and appropriate pieces, with great effect.

There was a fine display of fruits, vegetables, cereals, butter, cheese, bread, etc., within the Hall; also of various kinds of handiwork. The Marysville Carriage and Wagon Factory (Hill & Knaugh) made a fine show of their work. Mr. A. S. Warner, the architect and builder of the Hall, exhibited samples of flooring, doors, siding, molding, etc., from his steam mill. The Marysville and Sacramento Woolen Mills each made a full and fine display of their goods. Both of these mills are in a flourishing condition, and turning out most excellent work.

Outside of the Hall there was a fine show of agricultural implements—including Sweet's Patent Gang-Plow, also Hill's and others. Quite a spirited and well-contested plowing match was held, at which Hill's Plow, of Marysville manufacture, took the first premium. The regular Annual Address was delivered by G. Barstow, Esq.

THE Virginia and Truckee Railroad is finished to Gold Hill.

Irruption of Geologists.

Without warning, or mutual understanding, there arrived in San Francisco last week the heads of all the Western Geological surveys that are, or have been in progress recently, viz.: J. D. Whitney of the unfinished California Survey, Clarence King, and J. D. Hague of the Fortieth Parallel or Pacific Railroad Geological Survey, and F. V. Hayden, with his assistants, Messrs. Stevens and Persifor Frazer of the Colorado, Nebraska, New Mexico, and Wyoming Geological Survey. Report hath it that the heads met, quite unexpectedly to each other, somewhere near the corner of Montgomery and California streets, and, though old acquaintances, had not seen each other for so long a time and were so surprised that they did not recognize each other. Hayden is in the United States employ, and has just completed surveys of Colorado, Wyoming and New Mexico with special reference to coal, on which subject his reports and maps will undoubtedly prove highly valuable, and standards for reference. He has left the city for Mount Diablo, for the purpose of examining the coal deposits of that district.

Mr. Whitney has just completed a special survey that occupied some months in Colorado. Since the issuance of the second volume of California Paleontology and the Yosemite Book, he has brought to completion two volumes of Pacific Coast Ornithology uniform in size with the preceding volumes of the survey, and in connection with which an Eastern publishing house proposes to issue a third volume of Eastern Ornithology; so that the whole three volumes when completed will be the standard American work on Ornithology for a long time to come. A few advance sheets of this work which we have seen give token of a work of great value, as well as of superior mechanical and artistic excellence. One of the Pacific coast volumes will embrace all the known land birds, and the other the sea birds, from Alaska to Cape St. Lucas.

The second volume of California Geology which was to contain all the more important results of the Survey, was placed in abeyance by the failure of the Legislature to make an appropriation even for its publication. There is property in the shape of plates, maps, books, specimens etc., left on the hands of Prof. Whitney, remaining thus unavailable to those who would benefit from the results of the survey, amounting to a value of $20,000; while the State owes him for money expended from private resources on behalf of the survey $15,000. Prof. Whitney was cut off, two years ago, with a want of ceremony, and a depreciation in the remarks made regarding his labors by some of the members, entirely unmerited, and as unworthy of the intelligence of the speakers as unjust to Prof. Whitney,—language which would have been very differently pointed, perhaps, had there not been a better reason for stopping the survey than economy or the inefficiency of Prof. Whitney. Now that Whitney's grasp upon the embryo State University is disposed of, and the real opponents of the survey who "killed the appropriation" are safely ensconced in chairs of dignity in the Board of Regents, it is probable—certainly desirable and politic, as well as safe for the University—that so much consideration be at least given to the California Geological Survey as to finish it up, with the attention that the case demands.

PUMPELLY'S NARRATIVE "ACROSS AMERICA AND ASIA."—Leypoldt & Holt announce shortly to appear (royal 8vo, with maps and illustrations) Mr. Pumpelly's notes of a five years' journey round the world in the capacity of geologist and mining engineer, dwelling more especially upon Arizona, Japan and China.

Steamboat Building in San Francisco.

We made a brief allusion, a few weeks since, to the noticeable fact that the Risdon Iron Works, of this city, had, in the brief space of one month, constructed the machinery for no less than five steamers, having an aggregate power of 2,000 horses. A more full mention may not be out of place at this time.

The first of these steamers, the Neptune, was modeled and built by Middlemas & Boole, under the supervision of Mr. James Pollock, for use in towing vessels. She is 115 feet long, 22 feet 6 inches beam, and 9 feet 6 inches depth of hold; two engines, 22-inch cylinder and 24-inch stroke; two boilers with direct tubes four inches in diameter, containing 1,900 feet of heating surface, and capable of supplying steam of 90-pounds pressure with 100 revolutions per minute. The propeller is 9 feet 9 inches diameter, and 16 feet 6 inches pitch, giving a speed of 17 miles per hour, and a very high towing power.

Next came the Vallejo, modeled and built by D. Marcucci, under the superintendence of Mr. James Pollock, for the California Pacific Railroad Company, for the purpose of carrying freight to and from San Francisco to their terminus at Vallejo. Length, 130 feet; beam, 26 feet; depth of hold, 7 feet; built to run in shallow water. She has one engine 28-inch cylinder, 24-inch stroke, with propeller 8 feet diameter and 13 feet pitch. One boiler with 4-inch return tubes; containing 1,500 feet of heating surface, and capable of supplying 70 pounds of steam to 120 revolution of engine. This boat has run her distance of 25 miles, with a fair tide, in one hour and fifty minutes, without being pushed to her utmost; a very fair speed considering her dimensions.

Next in order is the Monterey, built by Messrs. Goodall & Nelson, for the Salinas trade, made purposely to draw little water and carry heavy cargo, and withal strong, to withstand frequent grounding on the shallow bars of the coast ports. Great credit is due her modeler and builder, Mr. Gates, in combining the qualities required, viz: great carrying capacity, strength, lightness and sea-going qualities, under the restrictions of shallow water, crooked channels and rough weather. Her length is 120 feet; breadth of beam, 27 feet 6 inches; depth of hold, 7 feet; draft of water, light. She is fitted up with one engine 24-inch cylinder, 24-inch stroke; upright engine boiler, return tubular, 5-inch tubes. Her heating surface is 1,200 feet, supplying steam of 70 pounds pressure to engines making 95 to 100 revolutions per minute. Speed, 11 miles per hour.

Fourth in order, comes the H. H. Buhne, built by Captain Kentfield, and under his supervision, for the purpose of towing on the bars on the northern coast. The length of this boat is 95 feet; beam, 22 feet 9 inches; depth of hold, 9 feet 6 inches. Engines similar to the cugines of the Neptune; but with return tubular boilers; and having 195 feet of heating surface. She is built in the strongest possible manner, to withstand the heaviest weather that may occur on this, the most stormy port of our coast, and looks as if no sea, however rough, could have any effect upon her. Her propeller and machinery have also been made, with a view to heavy towing in such situations; therefore, speed has been a secondary consideration, though so far, she has shown herself second to none of her class.

We come now to the fifth and last of the series built by the South San Francisco Ferry Company, which proved herself to be, as intended, very fast. This is the more satisfactory, considering that, in her construction, some novel ideas have been carried out.

She was built by John G. North, and engined by the Risdon Iron Works Co., under the superintendence of Capt. Tyler, who learned steamboating on the great Mississippi. The boat is 155 feet long, 25 feet 6 inches beam, 7 feet depth of hold, and of remarkable fine lines. Her saloon occupies the whole length and width of the boat, with state-rooms and smoking room on the upper deck, with pilot house forward of this. The engines are placed well aft, and rest immediately over the side of the boat, being the place of greatest strength, and are fastened through to the bottom of the boat. The boilers—two in number for each engine—are placed on the guards, and are entirely separated, and worked from the outside, so that no dust or noise is experienced in the bottom of the boat. The boilers are of the tubular description, each 48 inches diameter, 12 feet long, with 50 tubes 3 inches diameter, built in fire brick, and fitted with all the modern appliances for safety; are inspected, and allowed 115 pounds of steam. The engines are two, cylinder 22 inches diameter, 5 feet stroke—and are intended to make 40 revolutions with a 21-foot wheel, by this means developing 500-horse power. The engines do not stand, as is usual, in a line with the keel, but at an angle of one inch to the foot—wider forward than aft—while the buckets of the wheel are put on to bring them at right angles with the keel, thereby lessening the shock of the boards on the water; a very necessary precaution, considering the great velocity of the wheel and large amount of slip. Her speed is intended to reach 18 miles per hour; and from that made on her trial trip, there is no doubt but that this can be made.

We have thus briefly described what one of our workshops has done in a short time; and if compared with work of the same class done in New York, in the same space of time, will be found equal in quantity and quality with what are considered large works there. And, comparing the cost, we are assured that it is money saved to encourage home manufacture, as work of this class could not be put down here for less money to give equal results.

With the view of drawing the attention of our citizens to our capacity of supplying our own wants, we would invite the builders of all such machinery to furnish us with reliable information on the subject, in order that we may give publicity to the world of our resources and capabilities of doing anything our trade may require.

Nothing connected with the foregoing vessels has been imported except the raw material. All the lumber, knees, etc., are of our own growth; all the shafts are of our own forging; all the castings, iron and brass, of our own manufacture; even cocks and gauges (things of importation) were manufactured in California, and many of the castings were made from Oregon iron. The day, we are convinced, is not far distant when California will be able to furnish iron in quantities, and at rates sufficiently low, to supply her own wants.

In connection with the present subject, we may mention the fact that the United States Government, a month or two ago, called for bids upon two steamers—one side-wheel and one propeller—upon specifications made to suit the Eastern market, all the timber in their construction being of Eastern growth, thereby placing them beyond the reach of California yards. This fact ought to be sufficient to call our attention to our own products, and cause some steps to be taken to bring the qualities of our timber directly before the authorities at Washington; as we feel assured, upon good authority, that timber of first rate quality can be had in our own markets.

GOLD-BEARING ASBESTUS.—We were shown on Tuesday last two specimens of gold-bearing asbestus, by Mr. Maddux, of Georgetown. The specimens were taken from a seam in the rock, in his claim near the above place, and are of the ligniform variety of asbestus, with gold diffused all through. This is the first gold-bearing asbestus we have ever seen, and we do not remember of ever hearing of anything of the kind.—*Placerville Democrat.*

The only instance of the kind we ever met with was in a specimen of hornblendic asbestus brought to this city, some two years ago, by Governor Goodwin of Arizona, and noticed in the columns of the PRESS at that time. The Governor had but a single specimen, and was unwilling to part with it, as it was intended for a friend at the East, although he assured us, gold, so associated, was frequently found in the mines in Arizona from which the specimen in question was taken.

Metallurgical Notes.

Decomposition of Metalliferous Silicates in Steam Under Pressure.

From a notice in the London *Mining Journal* of August 7th, we observe that Mr. A. L. Fleury, of Boston, has taken out patents for the treatment of gold and silver ores found in quartz, or of silicious substances generally, by a chemical separation of their constituents by agitating them in a steam-boiler under pressure, with fluor-spar, or any other fluorine salt or acid, and carbonic acid, as reagents. Whether this process is entirely original with Mr. Fleury, or borrowed from a caveat in the Patent Office, is a matter of little consequence at present; but the fact is to be recorded that a similar process was originated, and to some extent tested, years ago, by a well known mechanical engineer of this city, who was led to that method of dealing with ores of the precious metals by analogies from nature. Warm circulating waters under greater pressure of depth in the bowels of the earth, were looked upon as the agencies of decomposition, re-distribution and concentration of the metals in veins. Such is the *modus operandi* of vein formation now generally recognized by geologists and chemists as the leading agency of nature.

In Mr. Fleury's artificial imitation, the pulverized gold or silver ore is mixed with from 5 to 25 per cent. (according to the more or less silicious nature of the ore) or fluor-spar, cryolite, or refuse from the working of the cryolite, or any other suitable fluorine salt or acid, and when thoroughly mixed together the mixture is placed in a strong boiler, which should have a stirrer arranged inside in such a manner as to permit the agitation of the mass, in order to prevent the material from adhering to the bottom. About one gallon of water is then added to the mixture for every pound. The said boiler is so arranged that a pressure of about 60 lbs. can be kept up for about two or three hours, the escape being so regulated that the vapor can be condensed in a cistern of water. When the boiler is closed and the valve fixed, as above stated, he introduces into and among the agitated mixture steam and carbonic acid, until the whole is dissolved into an opalescent milky liquid. The carbonic acid can be produced by any of the known processes, and either injected alone by its own pressure, or by a Giffard's injector introduced with the steam. The quantity of carbonic acid should be about one-quarter of the quantity of the steam injected. After the solution is complete the steam and carbonic acid are shut off, and the whole is allowed to cool down to about 200° Fahr. The liquid is then to be passed through a properly constructed amalgamating bath, where every particle of suspended metal is absorbed by the mercury, and the gold is taken up, and can be obtained in the usual way.

The liquid obtained is separately valuable as an article of commerce; making with lime, oxides of iron, zinc or lead, an excellent fire and water-proof paint; with sand or clay, cement for roofs; with paper pulp or sawdust, etc., a molding substance for useful articles resembling papier-mache; and with white quartz sand, slightly compressed, white flint marble for statuary.

Whether nature's chemistry can ever be imitated economically, in the reduction of special gold and silver ores, in large boilers with nature's own cheap reagents, appears to be a question worthy of inquiry and examination by practical chemists. The road once opened and made plain, there might be little more difficulty in it than in the very simple practice of amalgamation.

DEETKIN'S METHOD OF GOLD CHLORINATION, as practiced at the Eureka mine, Grass Valley, is thus described by the *National:* The sulphurets are thrown into one end of a long furnace and are gradually worked down to the lower end where the heat is most intense. When thoroughly roasted, they drop through a flue into a second furnace, are mixed with salt, which is scattered over them by the shovelful, heated again, and then removed and cooled. The sulphurets are now placed in vats holding from three to six tons, and treated with chlorine gas. The oxygen of the manganese combines with the sodium of salt and forms soda; the soda then unites with the sulphuric acid forming sulphate soda; the protoxide of manganese also combines with the sulphuric acid forming proto-sulphate of manganese; the chlorine contained in the salt having no affinity with any of the other substances, is set free. The precipitate is washed, collected in a filter, dried, mixed with a little borax and saltpeter, and melted, and comes out of the crucible in the shape of chemically pure gold, worth $20.67 per ounce, while the gold obtained from the quartz nets only about $17.25.

Estimation of Losses in Milling.

Prof. Partz, of Oakland, remarking upon the "strange indifference existing amongst mine owners and millmen," says:

Generally persons engaged in gold mining seem to hold to the maxim that in certain things ignorance is bliss, and prefer to "go it blind" rather than see that the material, from which handsome dividends might be paid, is running to waste. Sometimes, however, and particularly when the losing part of the business assumes serious proportions, and "to be or not to be" becomes the question, the mill doings *are* investigated; but even then the manner in which trials are made is, with rare exceptions, based upon erroneous premises, and the results obtained are far from being conclusive. In at least nine cases out of ten, the course pursued is: to catch a pan full of tailings, or to take samples from deposits near the mill, and have them assayed to see how much gold has run off with them. If the ore has been coarsely pulverized, or if a portion of the gold it contains is enclosed in sulphurets, such trials merely show that more gold might have been obtained had the ore been reduced to a finer state, or had the sulphurets been collected by concentration. As regards all that gold which has escaped in a free condition, they show nothing, because particles of gold that have once become suspended in flowing water are not apt to settle so readily as to be found near the mill, but may rather be looked for about the slimy deposits far down the creek or gulch along which the mill water takes its course. The only reliable mode of ascertaining the amount of gold or silver lost in milling, consists in having a considerable quantity of average ore pulverized without the use of water, and a sample, taken from the whole mass, subjected to a fire assay. In the absence of more convenient means for the reduction of say half a ton of ore to dry powder, any old arastra will answer the purpose. If the ore to be tried contains gold in coarse grains or threads, the matter becomes a little more complicated. In that case, from the sample taken for assaying all coarse particles of gold (such as are not likely to float in water) are removed, whereupon a current of water is turned on the ore which furnished the sample, until, under constant stirring, most of it is washed away. The remainder is still further reduced in bulk by "panning," until only coarse gold is left, from the amount which, together with the result of the assay, the value of the ore is determined. Results thus obtained are not absolutely correct, but sufficiently so for all practical ends, provided the trials are made by men expert in the kind of manipulations referred to.

In fine gold the losses are shown to be often as high as seventy per cent. In silver ore, the losses are also great; but as all silver ores must first be decomposed before amalgamation takes place, the results depend so much upon chemical reactions that no general estimate of probable losses can be arrived at. In mixed ores of gold and silver, Mr. Stretch's table of results on Hale & Norcross ore, in J. Ross Browne's Report, show a loss of 14¼ per cent. of the gold and of 48½ of the silver contained in the ore; a circumstance of proportion not easily accounted for.

AWARD OF PREMIUMS.—The full list of premiums awarded at the recent Mechanics' Fair is not yet ready for the press; but will undoubtedly be completed in season for our next issue.

WE acknowledge the receipt from the Secretary of the State of Oregon and from A. Roman & Co., of a batch of new books, which will be noticed in our next issue.

The San Joaquin Valley.

[Written for the Mining and Scientific Press.]

EDITORS PRESS:—As one travels through a section of country he must necessarily form some kind of an idea of it; and as every one receives impressions through the channel of his own thoughts, they must be moulded either in visionary or in real forms, in poetical or practical shapes, as suits the capacity and personality of the observer. Happy indeed is he who is endowed with the vision and wisdom to see and understand the material value and to enjoy the ethereal beauty and charming grandeur of nature. But as it is the province of your paper to deal only with the practical, I will endeavor to give a condensed idea of what I saw and think of the great San Joaquin Valley.

EXTENT AND CHARACTER OF THE VALLEY.

Alighting in the midst of grain fields from the cars of the W. P. R. R. at Corral Hollow Station, I proceeded in a southeast course up the valley on the west side of the San Joaquin river. This strip of valley between the river and the Mount Diablo Range, and running parallel with it, is about twelve miles wide for a distance of about fifty miles, when it widens to about twenty-five miles, and extends over a hundred miles in the same direction to Tulare Lake. This magnificent reach of valley is fringed on the left with the living green of river foliage and with the grass-covered mountains to the right—wriukled as with age and scarred with gorges, the scars of combat with hidden forces—mountains that have deposited the rich alluvial soil of light friable adobe at their feet; soil that two years of culture has proved to be equal to the very best wheat land in the world. This land, which three years ago was occupied only by roving bands of cattle and Mexicans, and two years ago was selling at $2.50 per acre, is now held worth $10 to $30 per acre, and much of it is occupied by an industrious and thriving population.

LAND GRANTS AND SPECULATORS.

The land immediately along the river is covered by grants for a hundred miles—grants that have never invited settlers, but supported immense herds of cattle. Railroad and other speculators have monopolized the balance, so that the poor man must go begging. These speculators and their advocates will tell you that but for them the land would have never been considered worth tilling; and that it is their energy and foresight that is the making of the country. While we grant that railroads are necessary and some capital is indispensable, we must insist that it is better for the toiling settler to occupy the land at Goverumeut rates of $1.25 per acre than to have to pay a tax of $5 to $50 per acre to some enterprising speculator.

But, smothering all "contempt" of capital, it is certainly pleasing to see the valley become settled by intelligent producers, who will strive to make the most of their labor toward the development of the country. Buildings going up, orchards and vineyards and gardens in contemplation, the making of home with its ennobliug joys, is the aim of the earnest settler.

The machinery that farmers are using, and the improved machinery that they still demand, is a marvel, and must occupy the minds and muscles of your worthy mechanics in devising and making. Indeed, the farmer himself, surrounded by his cultivators, his harvesters, etc., must either consider himself a mechanic or feel the need of being one. At all the landings along the river I noticed towns springing up aud exhibiting substantial evidence of present prosperity and a hopeful condition of things in the future.

THE EAST SIDE OF THE VALLEY—SOIL, ETC.

Crossing the San Joaquin to its east side, we seem to be in a different country. We find the soil generally sand; the sun seems hotter and the air dryer. The coast breezes that gently filter over the Diablo Mountains and bathe the plaiu we have just left in soft delicious breath, here seem lost in the feverish radiatiou of scalding sands.

The soil on the east side of the San Joaquin is the sediment of the Sierra Nevada waters. Well-diggers find adobe a few feet through the light surface alluvium. Although so much wheat to the acre can not be produced here as on the adobe soil, yet for many purposes this grand country —fifty miles wide by two hundred miles long, watered by numerous rivers aud creeks, and dotted with farms and clustering villages—may excel the world. Such trees, vines, plants, etc., as will reach with their roots the underlying strata of adobe —a mine of inexhaustible wealth to the farmers—must certainly attain the maximum of growth and productiveness. Every nurseryman knows that the fig, grape and walnut send roots deep into the soil. So does alfalfa, and many other plants. When once this subsoil is reached no drouth can ever affect the growth or vigor of the plant. I fearlessly predict for this immense tract of country the best raisin vineyards, the fiuest fig aud nut orchards and alfalfa meadows that the world can produce. This rich adobe crops out, or rather is not covered with saudy soil, in some localities. Such places are magnificent wheat fields.

Do not understand me as insinuating that the sandy soil is itself poor. On the contrary, it is rich in earthy salts and in vegetable mold. With irrigation it will produce anything, as can be seeu along the river bottoms. But as it has not the attractive capacity for water, nor the capillary power of drawing from beneath, it soon dries out on high land. Where this light soil covers adobe thinly, as it does over large tracts of country here, it insures whatever reaches the subsoil against any drouth.

SPECIAL IMPROVEMENTS.

If space allowed, I would like to mention many permauent improvements that I noted. I will give one item, viz: Perkins, Cressey & Co's flouring mill, built last year at Paradise, a thriving village ou the Tuolumue river, at a cost of $40,000. Two run of stone, 4½ feet burrs; power, one of Goss & Lambard's 50-horse power engines. They do grist work for thirty miles around, and find a ready market for all the flour they make. S. H. H.

COÖPERATION IN NEW YORK.—A carriage manufacturing firm in New York City has adopted a plan, to go into operation next January, whereby each of the employés is to share the responsibilities and the profits of the establishment, as follows: In each of the departments of the business local trades-unions are to be organized, and from these three members are to be chosen as a Board of Control. In addition, a Board of Governors, to consist of the Presidents of the Unions and the members of the firm, is to be organized. This Board, of which a member of the firm is to be President, is to have the supreme management of the business. The profits at the end of the year are to be divided among the employés according to their earnings, after allowing a reasonable percentage to the capital invested in the business.

THE number of threshing-machines in the United States is estimated to be about 229,000.

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"A SUCCESS UNPRECEDENTED."
[See fellowing extract from the Globe of May 14, 1868.]
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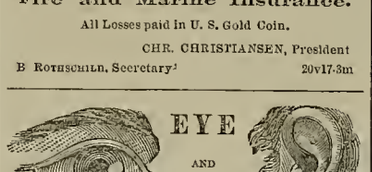

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MR. BROWNE intends to devote the autumn and winter months to a personal examination of such properties as may be offered, and proposes to go East with them early in the spring.
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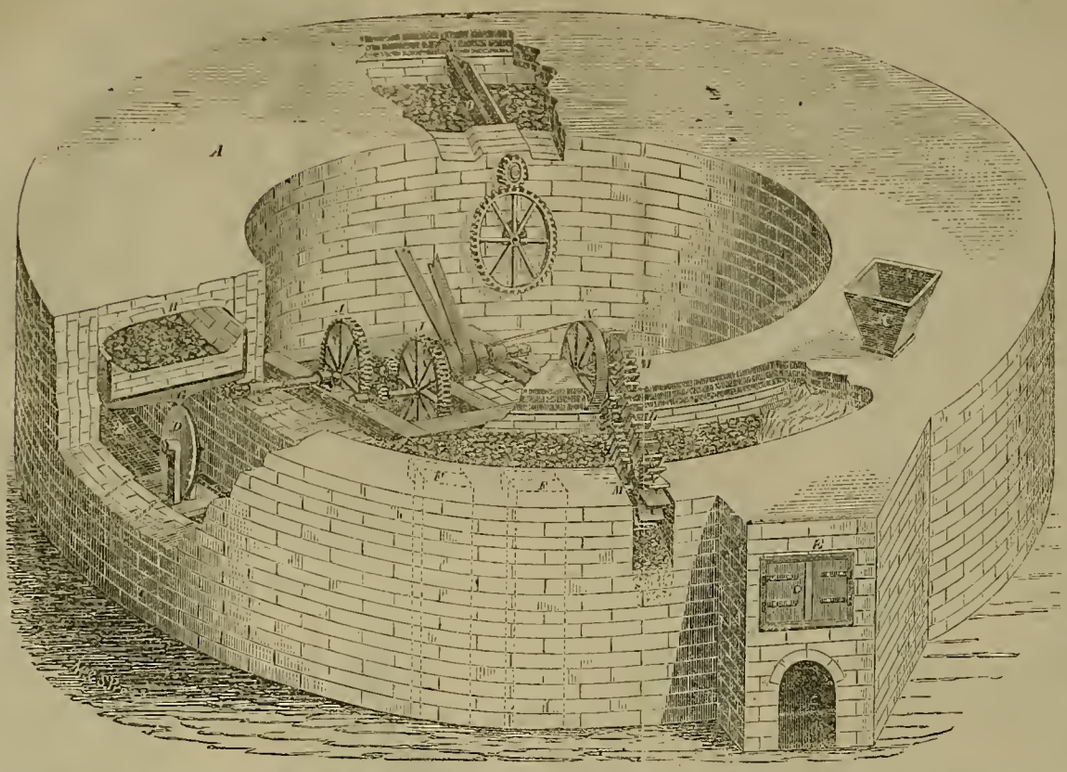
THE *Mining and Scientific Press* should have an extensive circulation in every mining community on the Coast.—*Placer Herald, Dec.* 19.

Fred. Ernst's Patent Rotary Roasting Furnace.



This is a mechanical furnace, which does away entirely with manual labor, excepting a fireman. It charges, roasts, stirs, and discharges the ore by a very simple mechanical contrivance,—in fact performs all the operation required in the oxidation or chlorination process of roasting gold or silver ores.

The ore is taken by means of an elevator from the battery, and is discharged constantly and regularly into the hopper, *K*, from whence it reaches the rotating hearth, *G*. This hearth consists of a cast iron orbicular ring paved or lined with bricks, and revolves on a series of iron rollers, *D*, and is kept continually in motion by means of the gearing, *J*. This gearing has two gear wheels, three feet in diameter, and pinions to regulate the speed from the cone pulley, increasing or diminishing it to conform to the required slow motion of the hearth, *G*. The hearth so charged and running constantly carries the ore into the first heat, which is next to the flues, and so passes all the different temperatures of the furnace, thus effecting a very uniform heating and chemical action on the ore; at the same time it has also to pass the stirrers, of which there are different kinds,—stationary and movable ones,—the number and speed of the latter varying according as the ore contains more or less sulphur. The movable paddle stirrers are shown at *O*. These movable stirrers are connected with the gearing under the iron bed of the hearth, *G*, as shown at different points, until it passes the fire-bridge, where it receives its ultimate and highest heat, and is then discharged by the disebarging apparatus. This discharging apparatus consists of two chain or rag wheels, *M*, *M*. These two chain-wheels drive a double endless chain with inserted plates of iron (scrapers). The chain hanging loose underneath between the wheels draws these iron plates through the cavity of the hearth, and so discharges constantly the roasted ore. To keep the current of air constant throughout the whole length of the furnace, the arch over the hearth decreases slightly from the fire-bridge toward the flues. For concentrated sulphurets it may be advantageous to increase the circumference of the hearth. The advantages claimed as attainable from the use of this machine are—the doing away with a large portion of the costly hand labor ordinarily required, and the better and more thorough accomplishment of the same by machinery. A great saving of fuel, not only through the length of the hearth, but also for the reason that all the gases which are lost by other furnaces are economically employed in this as a substitute for other fuel.

The furnace is so constructed that the large access of air required for the oxidation of the ore, in addition to that demanded for the consumption of these gases, does not operate for materially lower the temperature in the furnace. When the ore in this furnace is once desulphurized, the gases cannot form any new combination with the ores or metals therein, for the reason that while the currents of air and gases are moving to the rear, the furnace hearth is constantly advancing in an opposite direction.

The construction of this furnace is of the simplest kind, and all the necessary castings can be easily transported even on mule-back. The loss of the silver by sublimation in present furnaces, it is claimed, is avoided in this, as the silver condenses before reaching the flues; the distance being great, and the heat diminishing gradually until the gases reach the point of final exit. Liberal terms are offered to parties who desire to use this furnace. Further information can be had by addressing the Inventor and Patentee,

F. ERNST, San Antonio, Lower California, Mexico,

Or by calling upon H. W. SCHMIDT, Druggist, Kearny street, corner of Sacramento, or at this office.

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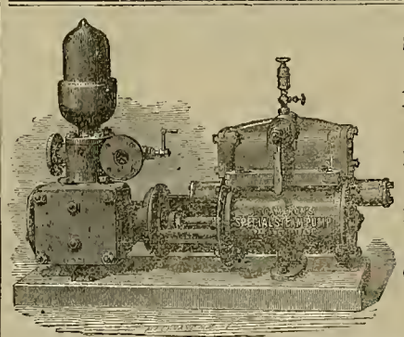

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Western Pacific R. R. Co.—Consolidation of the Western Pacific and San Francisco Bay R. R. Co's. Directors: Lelaud Stanford, C. P. Huntington, Mark Hopkins, Charles Crocker, E. B. Crocker, F. H. Miller, Jr., and A. P. Stanford. Capital stock, $10,000,000.

Women's Christian Association.—San Francisco. Nov. 6. Trustees: Laura B. Gaskill, Anna E. Duhois, Lucy E. Dam aud Helen M. Roberts.

San Rafael Water Co.—San Rafael. Nov. 6. Capital stock, $100,000. Trustees: F. W. McCue, Joseph Roberts, Jr., and Wm. L. Barnard.

Nevada M. and B. Co.—Sac., Nov. 4. Capital stock, $100,000, divided into 1,000 shares of par value of $100 each. Place of husiness, Hamilton, Nev. Directors: P. C. Hyman, George F. Mills, Frauk Wheeler, (red), E. T. Estes aud Reuhen Barney. The object of the association is to deal in mines and bullion; more particularly of the hase metal order. It is the intention to erect a numher of first-class smelting furnaces immediately, and also buy or make liberal advances on lead hullion.

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Placer Gold M. Co. Capital stock, $40,000 in 400 shares of $100 each. Trustees: Messrs. Heald, Coggius, Haley, Angell, and Malingren.

Meetings, Elections, Etc.

S. F. Dock Co.—Nov. 8. President, H. F. Williams; Vice President, A. G. Abell; Treasurer, Thos. Anderson; Secretary, E. C. Lovell. Trustees: H. Rosekranz, H. B. Brooks, W. W. Neal, H. O. Howard, D. W. Grant, Thos. Anderson, W. H. Bryan, W. H. Ladd and S. S. Piper.

Glenwood M. Co.—Oct. 29. President, A. H. Jordan; Secretary aud Treasurer, O. D. Squier.

Rationale of Losses in Float Gold.

To ascertain how long and under what conditious miuute particles of gold would remain suspended in water, and to ohtain, if possible, a clew to the cause of their suspension, Prof. Partz uudertook, while engaged in gold mining in North Carolina, in 1854, a series of experiments; and, although they were carried on, he says, without proper facilities aud hy the aid of makeshifts, their results were neverthcless sufficiently conclusive to convince him—1st, that fine particles of gold would remain afloat in water of common temperature for over 24 hours; and, 2d, that when the temperature of the water was raised to, or near to, its hoiling point, the suspended particles of gold would subside. Reflecting on these results, he was reminded of the well known property possessed by platinum of coudeusing gases upou its surface, and it seemed no far-fetched hypothesis to assume that gold, and probahly most other metals, possessed the same property, though in a lesser degree. Upon this supposition the fact that particles of gold did not sink in water in accordance with their specific gravity was readily explained, because the buoyancy of a film of air or other gas adhering to them would more or less conuteract their weight; and as the surface of hodies relatively increases as their hulk diminishes, it was plain that the smaller the particle of gold, the more apt it must be to be kept afloat by a film of gas upon its surface. It also became ohvious that when the water was heated to a certain degree, the particles of gold suspended therein must subside, hecause the film of gas sustaining them would be expanded and removed.

He says of his experiences that led to these tests: I observed that ores worth hy assay abont one dollar per hushel (100 pounds) were amalgamated in Tyrolean bowls, stirring tubs, rockers or other apparatus through which the pulverized material with the water from the stamps was passed, they would yield only from 25 to 30 cents worth of gold, while the same ores, ground and amalgamated in arastras or Chilean mills, with no more water than was necessary to form an easy flowing pulp, would yield fully douhle that amount. I also observed that by letting steam into the pulp the yield would be still further augmeuted. The great loss in working with a coutinnous current from the stamps could only he accounted for on the supposition that most of the gold escaped with the water, despite its high specific gravity.

On this peculiar characteristic of metals to condense gases, Overman is cited (Metallurgy, p. 282) as follows: Iron is hy far specifically heavier than quartz, still fine iron filings will float on water, while fine sand sinks directly. Carhon has not the weight of clay, yet fine carbon siuks sooner in water than clay; hut not so in air. Gold is hy far heavier than silex; hut we may ohserve by means of a microscope a multitude of fine particles of gold suspended in water, while we cannot detect the slightest particle of silicious matter, however fine it may be; the latter will suhside more quickly than visihle particles of heavy gold. All the metals appear to have a tendency to float in water when in fine particles, some more than others. This is caused hy a particle of gas, either air or water gas, adhering to the particles of metal, which causes it to be light and float, or hecome suspended. Precious metals appear to possess more of this quality than others. Sulphurets of metal, oxides, salts, and in fact all componud matter, do not manifest it. The size of a particle, and its form, have also some influenco in causing heavy matter to subside in water; a large grain will in all instances sink faster than a small one.

The last spike of the V. & T. R. R., of silver, is to be driven on the 15th inst.

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Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

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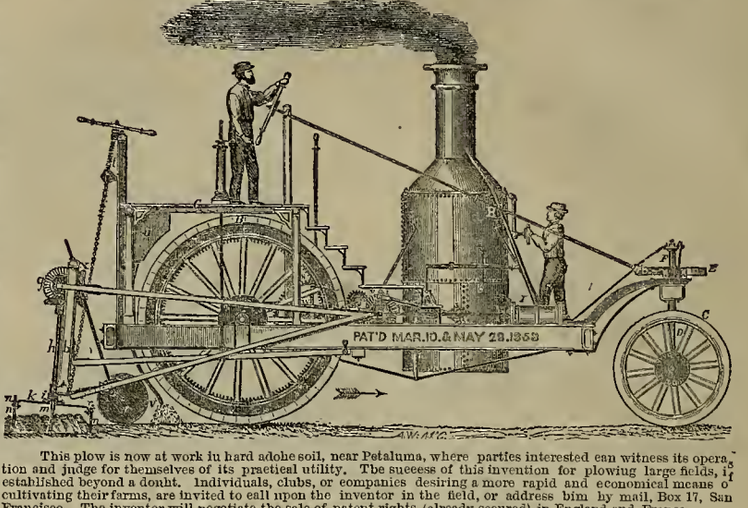
Dr. Hall has just returned from Europe after an absence of one year, during which time he has visited England, Ireland, France and Germany, and has held consultations with the following eminent physicians: Drs. Curling, Druit, Lee, Parker, Acton, Aitken, Churchill, Ricord, Velpeau, Boech, Sperino, and Dewilz. Many of the cases in which he held consultation with the above named eminent physicians were, we are sorry to say, those of Americans. Americans will not now be under the necessity of leaving the Pacific Coast for Medical Treatment, for Dr. HALL has brought with him every new mode of treatment known to the greatest physicians of the world. To old residents of the Pacific Coast it is needless to mention the address; to new comers, however, it is necessary to mention that he may be found at the American Surgery and Dispensary, 402 Montgomery street, opposite Wells, Fargo & Co's, San Francisco 21v18 3m

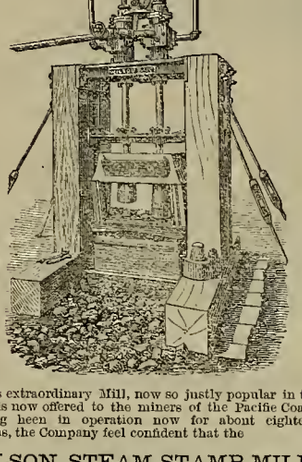
Photography.—For Cabinet Photographs, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. Howland,

The Standish Patent California Steam Plow.



This plow is now at work in hard adobe soil, near Petaluma, where parties interested can witness its operation and judge for themselves of its practical utility. The success of this invention for plowing large fields, if established beyond a doubt. Individuals, clubs, or companies desiring a more rapid and economical means of cultivating their farms, are invited to call upon the inventor in the field, or address him by mail, Box 17, San Francisco. The inventor will negotiate the sale of patent rights (already secured) in England and France.

THE WILSON
Patent Steam Stamp Mill.



This extraordinary Mill, now so justly popular in the East, is now offered to the miners of the Pacific Coast. Having been in operation now for about eighteen months, the Company feel confident that the

WILSON STEAM STAMP MILL,

For Durability, Efficiency,

AND ECONOMY OF WORKING,

HAS NO EQUAL.

The Wilson Steam Stamp Mill is the only Steam Mill that has had the severe ordeal of practical working, and proved itself eminently successful. It is now in operation in several of the Eastern States and Territories, and gaining an envious popularity. The whole machine is so simple as to he readily understood hy the most ordinary minds. In fact, its simplicity is its durability. The expense of crushing rock or cement with this Mill is less than one-half the expense of any other Stamp Mill, and less than one-half the cost. For further particulars inquire of

A. BICKNELL, Agent,
Nevada City, California,

Or of THE WILSON STEAM STAMP MILL CO., 326 Walnut street, Philadelphia, Pa.

Notice.—All persons are hereby warned not to manufacture or use any Steam Stamp Mills that are an infringement on the Wilson Patents, as they will be prosecuted to the utmost rigor of the law.

F. R. WILSON,
20v19-tf Supt. W. P. S. S. M. Co., Philadelphia.

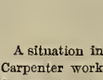
M. PRICE, Maker,

No. 415 KEARNY STREET,

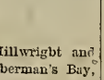
Between Pine and California, San Francisco.
20v19-3m

WANTED.

A situation in a Quartz Mill to do Millwrigbt and Carpenter work. Address, B. C. B., Fisherman's Bay, Sonoma County.
18v19-1m



J. BALL,
DENTIST,



645 Clay Street, bet. Montgomery and Kearny,
San Francisco, 20v19-1m

Oil Cake Meal.

THE BEST FEED KNOWN

For Live Stock.

We desire to call attention to OIL CAKE MEAL, which we are now manufacturing. No description of feed so greatly promotes the health of animals as Oil Cake Meal, and we urgently request all engaged in the dairy business, raising and fattening stock, or wool growing, to give it a trial, feeling confident that they will find it of very great value. By those who have used it thoroughly, ONE pound is pronounced to be equal to two pounds of Corn Meal; and in the U. S. Government Report of the Department of Agriculture for 1865 it stands in the following relation to other feeds as to the percentage of flesh produced from a hundred pounds of feed, viz.: Indian Corn Meal, 11 pr. ct.; Barley Meal, 13 pr. ct.; Oat Meal, 18 pr. et.; Oil Cake Meal, 22 2-100 pr. ct. For life-sustaining properties for all stock exposed to sudden changes of weather or overdriving it has no equal,

FOR MILCH COWS it is particularly valuable, increasing the quantity of milk and improving its quality to a far greater extent than any other feed known. A suitable quantity for them at the commencement is one quart in the morning and one quart at night, either alone or mixed with any other feed; generally mixed with the mash of bran, slops, roots, or cut feed of any kind. It will improve it to soak it for six or eight hours, the effect being to increase its hulk two or three times. The quantity can be increased gradually, according to the effect produced—ordinarily not exceeding three or four quarts per day.

FOR BEEF CATTLE it has fattening properties which cannot he found in any other feed—the beef always being more tender and juicy and of much finer quality than when fattened on any other feed; and no feed known will so quickly prepare animals for market as Oil Cake Meal.

FOR HORSES a small quantity given daily promotes their health, and is especially valuable for them when chilled or injured from over-driving. It is one of the best remedies known for Horses subject to the Heaves or Rheumatism, and greatly increases the cleanliness, evenness and glossiness of the hair.

FOR SHEEP there is no article of feed known that produces such fine mutton or so promotes the growth of wool. A small quantity given to chilled Cattle or Sheep will keep them alive and greatly increase their warmth and vitality.

At present price ($28 per ton) it is the cheapest feed in market. It is now selling in New York at $42 per ton, gold; at $50 per ton in England, where it has been proven for a long time to be in every respect the most profitable feed known for stock of all kinds—one ton being fully equal to three tons of bran.

The increasing demand for this meal from those on this coast hy whom it has been thoroughly tested has induced us to increase our facilities for its manufacture, and we are now fully prepared to furnish it in quantities as may be desired. For sale hy the Grain and Feed dealers, and at the manufactory, King street, near Third. All orders will receive prompt attention. Address—

PACIFIC OIL AND LEAD WORKS,

Nos. 3 and 5 Front street, San Francisco.
20v19-1am3m

Woodworth Planers,

PLANERS AND MATCHERS,

With patent expansion, feed gear and other improvements made at Worcester, Mass., in the most finished and substantial manner; also every description of Richardson Meriam & Co's, Smith's and Wood's celebrated

Wood Working Machinery.

Embracing Mortising, Sash and Moulding, Smith's Stickers, Slat and Door Tenoning, Boring, Shaping, Scroll Sawing, Planing, Rod and Dowell making and Re-sawing Machines, Wood and Engine Lathes, etc., for sale at Eastern prices, at the Machinery Depot of

BERRY & PLACE,
112 and **114** California st., San Francisco.

Agents for Blake's Patent Steam Pump, (warranted the best in the market); Davis & Furber's Woolen Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustrated Catalogues sent free.

The Mining and Scientific Press commenced a new volume with the new year. It is a credit to the State, and to the mechanic or miner, is a great source of valuable information. It has every appearance of prosperity, and we hope it may continue growing in wealth and influence.—*Pajaronian.*

Wilson's Steam Stamp Mill.

[Written for the Mining and Scientific Press.]

EDITORS PRESS:—On my arrival here, I found the quartz community considerably interested on the probable revival of quartz mining, and business in general, by the introduction of the Wilson patent steam stamp mill, which is now being erected on the Vigilance quartz mine, near this city, and in a few days will be in operation. The results stated to be attained by this mill in the older States and Territories is truly remarkable; and if the two being erected in this State produce the same results as in other States, it is fair to presume a great impetus will be given to quartz and cement mining, as well as such other business as follow in their train.

Being desirous of knowing all the particulars of the Wilson mill, and learning the inventor was in this place—having arrived from Philadelphia to superintend the erection of the first mill in California—I sought him out, and found him to be a gentleman posted in the manipulations of quartz from his large experience in this State (dating his pilgrimage hither from the palmy days of '49), and of decided mechanical abilities, the proof of which is the steam stamp mill that bears his name.

Together with a small party and the inventor, I visited the mine where the mill is being erected; and after listening to an explanation of the merits and peculiarities of the mill, one is impressed with its extreme simplicity, compactness and strength, seeming to justify one in believing that it is all, in point of durability, efficiency and economy, that is claimed for it. I regret very much I could not see the mill running; as, owing to the amalgamating works not being finished, the mill will not be able to run for several days. [An illustrated advertisement in another column will give the practical millman or mechanic an idea of its construction.—EDS. PRESS.]

The company now owning the Wilson patent very wisely concluded to perfect and thoroughly test their mill before bringing it to this coast. They have manufactured and sent out nine mills, seven of which are stated to be in active operation, producing results which, if the two being erected in this State carry out, will certainly entitle the inventor to the rank of a public benefactor. Several attempts have been made to make a steam stamp mill that will stand the severe test of practical work on mines; and I am assured that, with the exception of the Wilson mill, they have all been failures when put to large working tests. But Mr. Wilson's practical mining experience and mechanical skill, it would seem, has enabled him to surmount all difficulties and place his mill at the head of all crushing machinery. He has had his mill now in operation for about eighteen months, and demonstrated it to be all that is claimed for it; the first cost of which is considerably less than one-half that of its equivalent of any stamp mill, and doing its work fifty per cent. less cost than any known mill.

I predict for this mill a brilliant future; and think that all miners that have the future of this country at heart will join me in wishing the inventor a rich reward for the three years spent in perfecting an invention that will cause hundreds of mines to be worked by this cheap and apparently durable and economical mill; thereby benefitting the State immensely. I shall watch the progress of the mill, and keep you posted. TRAVELER.

[With our correspondent we hope Mr. Wilson's mill will realize the success anticipated for it. The more improved steam stamp (or other economical) quartz mills introduced, the better for our coast.—EDS. PRESS.]

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

California Steam Navigation COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE
" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE.....
" CORNELIA.....CAPT. W. BROMLEY
" JULIA.....CAPT. E. CONCKLIN.

Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE, President

13v12

New Mining Advertisements.

Bucklin Silver Mining Company.—Location of Works: White Pine District, White Pine County, Nev.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the thirtieth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J W Bucklin	2	500	$25 00
J W Buck'in	3	500	25 00
J W Bucklin	4	500	25 00
J W Bucklin	41	300	15 00
G W Rogers	12	100	5 00
Joseph Lawler	35	2000	100 00
Thos H Brooks	37	100	5 00
M Emma Faber	62	100	5 00
Abram Moger	no cert. issued	1612	80 60

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 40 Merchants' Exchange, California street, San Francisco, on the thirtieth day of November, 1869, at the hour of 2 o'clock P. M. of said day, to pay said delinquent [assessment thereon, together with costs of advertising and expenses of sale.

S. D'ELL STONE, Secretary.

Office, No. 40 Merchants' Exchange, California street, San Francisco. no13

Mount Tenabo Silver Mining Company.—Location of Works: Cortez District, Lander County, State of Nevada.

Notice is hereby given, that the Annual Meeting of Stockholders of the above named Company, will be held on Thursday, the 25th day of November, 1869, at 7½ o'clock P. M., at the office of the Company, No. 426 Montgomery street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.

CHAS. F. SCHULZE, Secretary pro tem.

Office, 426 Montgomery street, San Francisco, Cal.
San Francisco, November 10th, 1869. no13

North America Consolidated Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of September, 1869, an assessment of two and one-half cents (2½c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN ARMSTRONG, JR., Secretary.

Office, 302 Montgomery street, San Francisco. oct2

OFFICE NORTH AMERICA CONSOLIDATED MINING COMPANY.—NOTICE.—At a meeting of the Board of Trustees of the above Company, held this day, it was resolved to postpone the publication of the delinquent list until Thursday, the twenty-fifth day of November, 1869, and the time for sale of delinquent stock until Monday, December twentieth, 1869. JACOB BACON, Secretary pro tem.

San Francisco, Oct. 30th, 1869. no13

Silver Star Consolidated Silver Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1869, an assessment of fifteen (15) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINOTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. no13

Mining Notices--Continued.

Alleghany Consolidated Gold Mining Company, Location of Works: Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Tinkins	9	1500	$450 00
A L Whitney	32	185	55 50
Charles Adams, Trustee	12	1000	300 00
I N Thorne	13	125	37 50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 37, New Merchants' Exchange, on the fifteenth day of November, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. oc30

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty (50c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner Montgomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary.

Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Glenwood Mill and Mining Company.—Location of Works: Greenwood, El Dorado County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of October, 1869, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 418 California street.

Any stock upon which said assessment shall remain unpaid on the fifteenth (15th) day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the seventeenth (17th) day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. oc16

La Blanca Gold and Silver Mining Company.— Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of November, 1869, an assessment of one dollar ($1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 312 Front street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOSEPH GOLDMAN, Secretary.

Office, No 312 Front street, San Francisco, Cal.

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner of Montgomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary.

Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Rippon Gold and Silver Mining Company.— Location of Works: Silver Mountain District, Alpine County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Isaac Lustig	5	5	$1 25
Wm Brown	11, 232, 234 277	70	17 50
Daniel Toy	23 30	50	12 50
J Slmar	34	5	1 25
Isaac Marks	35	5	1 25
Jas S S Robinson	56	10	2 50
Matthew Davidson	79	12	3 00
Jas Allen	105	50	12 50
Mary Ann Toy	107	10	2 50
John Cosgrove	108	50	12 50
Mary Ann Roper	110	13	3 25
Belinda Roper	111	12	3 00
T C Riddell	112	10	2 50
Thos Magulre	115 149	50	12 50
Wm Oavigan	121 184	25	6 25
John Mason	122	10	2 50
Mary C Mason	123	10	2 50
H J Davis	127	10	2 50
Thos Craigle	120 203	70	17 50
Lott Mulcahy	130 157	15	3 75
Thos Fay	132	10	2 50
David M Short	134	10	2 50
Chas Mayer	135	10	2 50
J Bonnaud	136, 161, 231 282	40	10 00
B C Levy	137	5	1 25
John Sanquet	138	15	3 75
Lazard Godchaux, 139, 160 270 230		25	6 25
C Palmer	143, 222 289	27	6 75
Thos Reynolds	151 292	35	8 75
Michael English	152	25	6 25
F Mahon	155	25	6 25
P unningham	156	5	1 25
Thos McCullough	159	10	2 50
Stephen McGillan	164, 166 220	20	5 00
F J McMahon	170 183	50	12 50
Elizabeth Curran	194 195	20	5 00
F H Moore	210	20	5 00
C B Oregory	211	20	5 00
J Martenstein	225	1	25
P M Wellln	242	10	2 50
Jas Louzh	247 248	20	5 00
Annie E Stewart	249	20	5 00
M O Shove	256, 257, 258 259		
	260, 261 262	90	22 50
John Hutchinson	268	1	25
B Curran	272 273	20	5 00
Henry Eno	278	25	6 25
E G Bidleman	283, 284 285	25	6 25
C C N Little	290	20	5 00
M Heaphy	281	5	1 25
Oeo Langridge	294 295	20	5 00

And in accordance with law, and an order of the Board of Trustees, made on the sixteenth day of September, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Saturday, the sixth day of November, 1869, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. F. BERNARD, Secretary pro tem.

Office, northeast corner Fifth and Howard streets, San Francisco, California. oc30

POSTPONEMENT.—The above sale is hereby postponed until Monday, the fifteenth day of November, 1869, at the same hour and place. By order of the Board of Trustees.

no5 A. F. BERNARD, Secretary pro tem.

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment (No. 2) levied on the twenty-fifth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. shares.	Amount.
Bishop, T B	unissued	1000	$200 00
Coy, Frank	unissued	1000	200 00
Creighton, F	2 to 11 inc—ea 100	1000	200 00
Gibb, W T	1	1000	200 00
Gibb, W T	unissued	1000	200 00

And in accordance with law, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salerooms of John Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, Cal. on Monday, the twenty-fifth day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

SAM'L S. MURFEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. oc9

POSTPONEMENT.—The above sale is hereby postponed until Monday, the twenty-second day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc23 SAM'L S. MURFEY, Secretary.

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
Oeorge S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	3	268	bal 78 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	31	1253	bal 127 75
J H H Williams	69	979	bal 92 21
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10	bal 1 00
W H Kelm	43	5	1 [illegible]
Otis V Sawyer	45	20	5 [illegible]
Otis V Sawyer	46	20	6 00
R G B McDonough	48	100	bal 10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	59	630	bal 63 00
J D Littlefield	61	630	bal 63 00
George H Russell	64	630	bal 133 12
S M Smith	74	200	bal 20 00
Samuel D Meyer	75	50	15 00
George B Merrill, Trustee	63	631	189 30
Otis V Sawyer	71	1200	bal 112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. RUSSELL, Secretary.

Office, No. 439 California street, San Francisco. se25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc9 GEO. H. RUSSELL, Secretary.

POSTPONEMENT.—The above sale is hereby postponed until Monday, the fifteenth day of November, 1869, at the same hour and place. By order of the Board of Trustees.

nov6 J. H. H. WILLIAMS, Secretary pro tem.

Metallurgy.

MOSHEIMER'S Pioneer Mining School —AND— METALLURGIC WORKS.

ESTABLISHED.....1858.

Having established the first Practical Mining and Metallurgical School in the United States, I would call the attention of gentlemen who may wish to obtain a practical knowledge of

Chemistry, Assaying and Metallurgy,

That I am prepared to teach all the above branches in less time than in any European School.

I also undertake to work any kind of ore, or mineral substances.

Special attention I would call to all parties who have the so-called rebellious ores, that I undertake the construction of any kind of Smelting, Chlorination, Amalgamating, Refining, or Manufacturing Works.

I refer not to single persons, but to all the works which I build in the States of Nevada and California, all of which are in successful operation.

For terms, apply to JOS. MOSHEIMER, Practical Chemist and Metallurgist.

Office, 328 Montgomery street; Metallurgic Works, 2005 Powell street, San Francisco. 16v19-3m.

G. W. STRONG,

ASSAYER AND WORKER OF ORES,

No. 10 Stevenson street, near First, San Francisco.

Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms. 14v15qr.

Professional Cards.

J. S. PHILLIPS, M. E.,

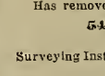
CONSULTING ENGINEER

Examiner of Mines, etc.,

423 Washington street.....San Francisc

(Having had 33 years' experience in Europe and America, supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinating, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

DR. KNOWLES, Dentist,



HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco. 21v18-1y

JOHN ROACH, Optician,

Has removed from 522 Montgomery street to

540 Washington street,

East of Montgomery.

Surveying Instruments made, repaired and adjusted 22v17-3m

JAMES M. TAYLOR,

Attorney and Counsellor at Law,

Court Block, 636 Clay Street

SAN FRANCISCO.

2v15-1qy

GILES H. GRAY, JAMES M. HAVEN,

GRAY & HAVEN,

ATTORNEYS AND COUNSELORS AT LAW,

In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,

27v16 SAN FRANCISCO.

R. G. ROWLEY,

ATTORNEY AND COUNSELOR AT LAW,

618 Merchant street,

Between Montgomery and Kearny, P. O. Box 2102, San Francisco. 1v19tf

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.

THOMAS MOONEY, President.

August 2, 1869. 6y19-1m

Effect of Hot Steam on Mortar.

The chimney of a flouring mill at Fairfield, Iowa, recently fell, causing the destruction of the entire mill. The catastrophe was caused by turning the escape steam into the brick flue near its base, and at this point the bricks could be crushed between the fingers, while the balance of the chimney was perfectly solid. This action of hot steam on mortar is a very important matter to be borne in mind. The *Architectural Review* thus comments: "Now it is strange that such errors can be committed by thinking men as to let in such a subtile agent as steam upon such an absorbent material as brick. With the exception of oil, there is no more searching power than that possessed by steam. And when we consider how liberally brick admits water into its pores, we cannot be surprised to see what the effect of the injection of steam must be on it. It is not impossible that common lime mortar was used in the brickwork, and that there was a total absence of 'pargeting.' We should, under these circumstances, be very much surprised indeed if such a chimney, under such a destructive influence, could stand for any length of time."

FIFTY-SEVEN CHURCHES in New England are said to have been either blown down or seriously injured by the late severe gale. The injuries were mostly confined to the towns. Some of the papers have taken them to task for not building their churches in a more substantial manner.

FOREIGN SHIPPING.—Of our last year's exports more than two-thirds went abroad in foreign vessels. Reason: laws which render it impossible for American merchants to build ships for themselves, or to buy ships built abroad.

New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the veinous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever:* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

Machinists and Foundries.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GLASGOW

Iron and Metal Importing Company

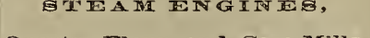
Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.

21v16-3m W. McCRINDLE, Manage.

PACIFIC FILE WORKS,



No. 53 Beale Street, bet. Market and Mission,

SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.

2v17-3m **T. G. DURNING & CO**

JAMES MACKEN,

COPPERSMITH,

226 Fremont st., bet. Howard & Folsom.

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to. 13vII

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Mission,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Brazes, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. CALLAGHER. "J. H. WEED V. KINGWELL.
9v13-1y

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,

Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand.

Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States

Iv17tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

OROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

WILCOX'S PATENT WATER LIFTERS,

Dunbar's Patent Self-Adjusting Steam Piston PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

I4v11 SACRAMENTO CITY

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,

SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequaled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Challenge Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Valuable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.

San Francisco, May 1, 1868. 18v16tf

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco,

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in barrels. Black Lead, Coke and Soapstone ground to order.

☞ Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.

10v18qr

CALIFORNIA FILE MF'G CO.

No. 437 Brannan Street,

Between Third and Fourth, San Francisco.

W. WUSTHOFF, L. KRAMER, M. HARRIS. J. BURKE.

NEW FILES OF EVERY DESCRIPTION

ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19-qy

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel,

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,

13 and 15 Fremont street, near Market, San Francisco.

10v14qr

CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

143 Beale St., bet. Mission and Howard,

SAN FRANCISCO.

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.

21v17-qy **J. WEICHHART, Proprietor.**

SAN FRANCISCO

Pioneer Screen Works.

JOHN W. QUICK,

203 Fremont street, near Howard, San Francisco.

Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

CITY IRON WORKS COMPANY.

CLERC & CO.,

IRON FOUNDERS,

Steam Engine Builders, and Makers of all kinds of Machinery,

16v16q No. 23 Fremont street, San Francisco.

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

Corner of Beale and Howard Streets,

SAN FRANCISCO.

Steam Engine Builders, Boiler Makers, Machinists, Foundrymen, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.

Directors:

S. F. Butterworth, Lloyd Tevis, James Pollock,
Wm. Norris, Joseph Moore, Chas. E. McLane,
John A. Risdon.

JOHN N. RISDON.....President.
JOSEPH MOORE.....Vice President and Superintendent.
LEWIS R. MEAD.....Secretary.
21v17-qy

H. J. BOOTH, GEO. W. PRESCOTT, IRVING M. SCOTT.

UNION IRON WORKS,

CORNER FIRST AND MISSION STREETS,

SAN FRANCISCO.

MANUFACTURE

ALL KINDS OF MACHINERY

MARINE, LOCOMOTIVE,

And Stationary Engines,

Booker Patent Locomotive Stack,

ARMSTRONG PATENT

Heater, Condenser and Filter, Combined.

BOILERS, HIGH AND LOW PRESSURE,

Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Patton's, and Belding's Amalgamating Pans and Settlers; Hendy's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white Iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Hendy, Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.

We would call particular attention to our

SCOTT & ECKART CUT-OFF ENGINE.

As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Off at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:

"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 90-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 60 or 60-horse power with ease and economy. Awarded silver medal. Wm. Burnett, Monty Fletcher, John Myers."

Pickering Governors, Machinists' Lathes,

Planers, Shapers, Drills, Etc.

On hand and for sale, Drawings furnished free of cost. Orders promptly attended to. A complete stock of fittings on hand.

☞ We are prepared to furnish all kinds of Machinery at short notice, as our facilities are unequalled on the Pacific Coast.

H. J. BOOTH & CO.

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, oetween Fremont and Beale, San Francisco.

Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their Inventions. 1v16tf

HUGH H. LAMONT. WM. CALDWELL.

CYCLOPS MACHINE WORKS,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

ap17-3m **113** Beale street, near Mission, S. F.

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

To Quartz Mining Companies.

To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—

One Steam Engine, 60-horse power, made by Burden, Brooklyn, New York.
Two large Boilers, in complete order.
One Eight-stamp Battery.
One Chile Mill.
One Cornish Lift Pump, 6 inches, of superior make and finish.
280 feet of 5-inch Iron Suction Pipe.
One large Water Tank.

And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Flumes, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.

The Company having ceased operations intend selling off their effects as speedily as possible.

For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

Machinery.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has everrequired repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setters for themselves, at the office, 220 Fremont street,

1v1 San Francisco.

The Most Important Invention of the Day.

HALL & LEE'S

New Method of Packing Stationary Joints in Steam Engines,

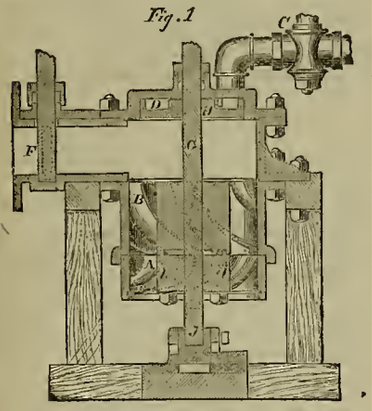
— AND ALSO IN —

STEAM AND WATER PIPES.

BY THIS METHOD OF PACKING THE JOINTS ARE made perfectly steam-tight inside as well as outside, thereby effectually preventing the steam from cutting into the joints of the steam chest. Consequently, an Engine packed after this method will last twice as long as it will when other Packing is used; and the joints may be opened and closed every day, and they will be steam-tight every time they are closed, and the same Packing will remain good forever. Consequently, owners of mills will make a great saving, both in time and money, by having their engines packed by this method. Patented June 8th, 1869. By permission we refer to A. J. Binney, Supt. Northern California Railroad, and A. D. Starr & Co., Proprietors of the Buckeye Mill, Marysville. State, County and Mill Rights for sale by A. H. HALL & H. T. LEE, Marysville, Cal. 6v19-3m

Lind's Improved Water Wheel

Fig. 1

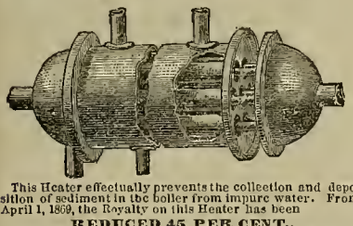


Has given the highest satisfaction to parties using it. We are now prepared to sell it at reduced prices. Will also contract for all kinds of Machinery—Flour, Saw and Quartz Mill. All our work guaranteed. We will send competent men to put up our Wheels and Machinery. We contract for or do it ourselves. Our extensive acquaintance with millwrights on this coast enables us to furnish millmen with the best of workmen at short notice. Drawings for contracts furnished gratis. Send for circular. A. LIND, Millwright,

Pacific Iron Works, San Francisco.

Refer to John Sime and J. J. Haley. 19v19

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,

16v18-3m Patentee, Sacramento, Cal.

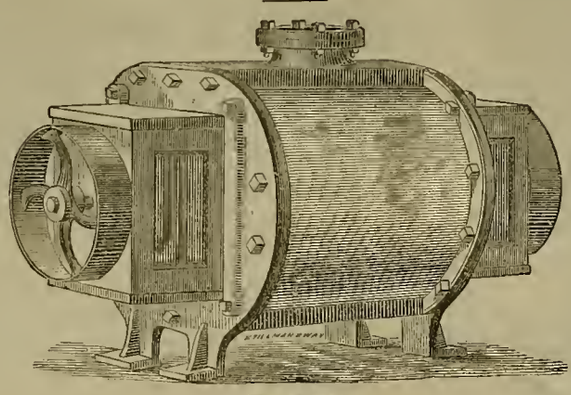
ENGRAVING ON WOOD DESIGNING AND ENGRAVING on wood and for electrotype cuts of every description, done by superior artists at the office of the Mining and Scientific Press. Fine Cuts made for Book and Newspaper Illustrations, and for Fancy Labels for printing in various colors; Monograms, Seals, etc., etc. Prompt execution and reasonable prices.

DEWEY & CO.,
No. 414 Clay street, S. F.

ROOT'S PATENT FORCE BLAST ROTARY BLOWER

MANUFACTURED BY KEEP & BARGION,

At the Globe Iron Works, Stockton, California.



Awarded the First Premium at the Paris Exposition,

Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**

REQUIRES **Fifty Per Cent.** LESS POWER Than any Blower Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

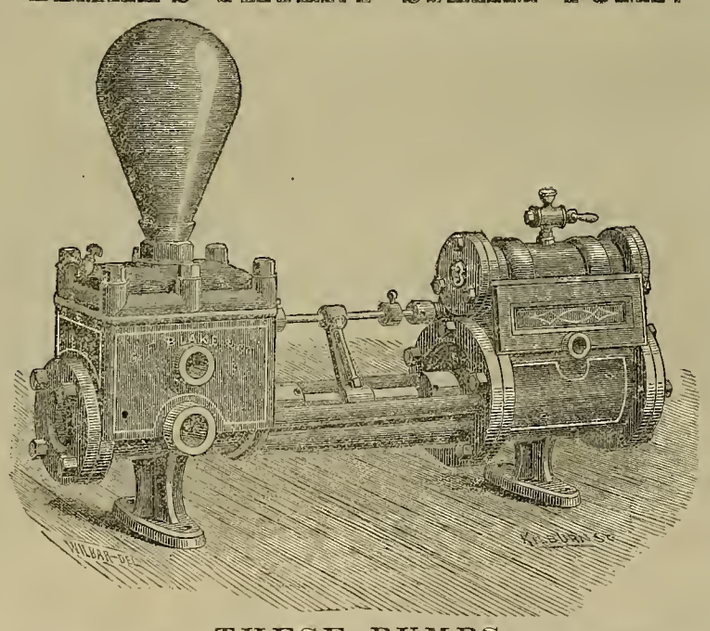
Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,

4v16 3m **Globe Iron Works, Stockton, Cal.**

BLAKE'S PATENT STEAM PUMP.



THESE PUMPS

Have been tested, and found to be indisputably without an equal wherever tried. They are constructed in the most simple style, and built in the most thorough manner—specially calculated for SIMPLICITY, DURABILITY and POWER.

Some of the advantages of the Blake Pump may be summed up as follows:

It is POSITIVE UNDER ANY PRESSURE. *May be run as slow or fast as may be desired.* Will discharge more water than any others of the same dimensions. Has no leaky joints, the steam part being cast in one entire piece. The steam valve is perfectly balanced, is cushioned at each end, and slides with the greatest facility. Will start at ANY point of the stroke, and will discharge all the water of condensation.

The Pump has no crank or fly-wheel, thereby saving a considerable item of expense to the purchaser. Having NO DEAD POINTS, it therefore needs no watching, and is consequently ready to start without using a starting bar or any hand work whatever.

The Blake Pump is extensively used

On Railroads and Steamboats; in Hotels; for Mining and Fire Purposes;

IN BREWERIES, TANNERIES, SUGAR HOUSES, FACTORIES, MILLS, LAUNDRIES,

And as BOILER FEEDERS, wherever steam is employed. In fact, wherever water or other liquids are desired to be raised in large or small quantities, or against heavy or light pressure, it is the

Cheapest and Best Pump that Can be Used.

It is offered to the public as the most perfect independent Steam Pump ever invented. TWELVE DIFFERENT SIZES are made, capable of throwing from 1,000 to 180,000 gallons an hour, and adapted to any class of work that might be required. For sale by

BERRY & PLACE,
112 and 114 California Street, San Francisco.

☞ Every pump will be warranted to perform the work required of it by the purchaser, or it may be returned and the money will be cheerfully refunded, 17v19

Ayer's
Hair Vigor,

For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

HAIR DRESSING,

nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.

Prepared by Dr. J. C. Ayer & Co.,

PRACTICAL AND ANALYTICAL CHEMISTS,

LOWELL, MASS.

PRICE $1.00.

Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18eow4m

Mining and Scientific Press.

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[SPECIAL NOTICE.]

Winn's Patent Shampooing Apparatus!

By the use of the apparatus here shown, the unpleasant mode in which the operation of shampooing is usually performed, is converted into a neat and tidy process, very effective and decidedly agreeable. By the aid of this apparatus, the head is washed and scrubbed in a bath of water, of any desirable quantity or temperatnre, and the employment of which, upon the top of the head, is productive of the most delightfully agreeable sensations, such as impart an entirely new feature to the process of shampooing. The apparatns is tasteful as well as substantial in its construction; and its use is equally as effective when applied to the long, flowing hair, as worn by the ladies, as to the shorter hair of gentlemen's wear.

To form this apparatus, a rim or bottomless pan is first coustructed, with a gutta percha lining so devised and provided with an elastic strap, as to fit tightly around the head, helow the principal part of the hair. The drapery or curtain, which is seen to fall below the rim, is both for ornament and use; it serves to conceal from view the somewhat unsightly straps, lining, etc., which form the water-tight joint hetween

the head and apparatus thereto applied, and a subsequent elastic gutter, which is strapped tightly abont the head, at the extreme lower part of the hair, to catch any water which may possibly escape from the main apparatns. As seen in the engraving, each has a flexible tube appended, by which the water may be carried off to a sink or other suitahle receiving vessel, so that the person will have no occasion to leave his seat during the entire operatiou, or even to remove his neck-tie.

The soap-suds or any other shampooing fluid which may be employed, is poured upon the top of the head, within the rim, after it has been properly adjnsted, and a brush or mop, or sponge, or any other snitahle instrument, is then employed within the body of the liquid to clean the head and hair. The liquid is readily discharged through a stop-cock and the tube shown in the rear, and fresh water for rinsing applied, as often as may be desirable. Standards, with curved rests or supports, placed upon the shoulders, and adjusted hy screws upon the top, all shown in the engraving, are affixed for the purpose of taking the weight of the apparatus and a portion of the weight of the water from the head. The flexible rim which adjusts the apparatus to the head makes this device practicable.

Previons to pntting on the rim an elastic strap is placed around the head to hold up the hair intended to be included within the rim, when it may he properly washed and cleansed. This arrangement is particularly useful and iudispensable in fact, in shampooing the head of a lady with flowing hair. This combined apparatus renders the process of shampooing as easily and as readily performed for a lady as for a gentleman. Mr. M.L. Winn, of this city, the inventor and patentee, exhibited his apparatus and the practical employment of the process, in the Mechanics' Fair, and will soon open a saloon in this city. The patent was obtained by the M. & S. Press Patent Agency.

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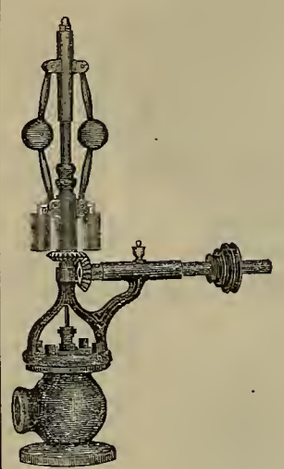

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Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

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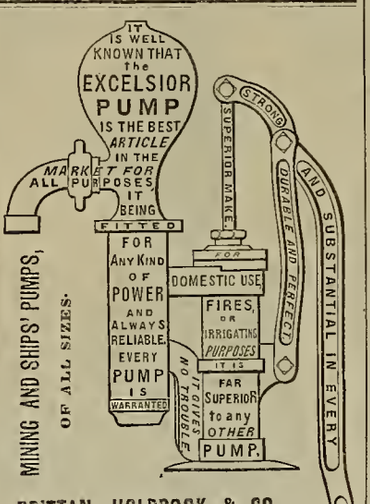
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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

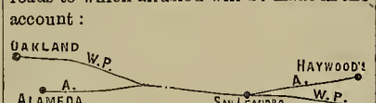
BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, NOVEMBER 20, 1869. VOLUME XIX. Number 21.

The Western Pacific and Alameda Railroad Disaster.

The present has been a year most prominently marked for the number and magnitude of its disasters. Explosions and fires in mines, disasters upon rivers and railways, have fallen thick and heavy upon us, in every direction. Scarce had the sound of rejoicing at the completion of the last link of the Pacific Railroad died away in our neighboring city, and while the emblems of joy were still to be seen in her streets, the entire State was horrified at the announcement of a most terrible railway accident, almost at our very doors. The painful, horrible story of Sunday morning last is already familiar to our readers—indeed, borne abroad on the wings of lightning, it has been read in almost every civilized country on the globe.

Desiring to place upon record, minutely and accurately, the particulars of this calamity, the proprietors of the MINING AND SCIENTIFIC PRESS promptly dispatched a faithful artist and a competent reporter to collect every important fact and to secure accurate drawings of the appearance presented at the scene of the collision. The correctness of the pictorial representation herewith given, will be indorsed by every individual who was present immediately after the dead and wounded had been removed from the wreck. The cars not seriously injured, on both trains, have been omitted by our artist, for the reason that their presence is unimportant, and would add too much to the length of the representation, to give the more striking portions of it in sufficient detail. The omitted cars are as follows: On the Western Pacific train, which occupies the left of the picture, a passenger and two silver palace cars on the extreme left of the train, and a baggage car between the telescoped cars and the wreck of the engines. On the Alameda train, the cars not shown, are two passenger cars on the extreme right. The representation not being designed to produce a sensational effect, all human figures, either dead or alive, have been purposely omitted; our aim being merely to show the effect of the colision on the train.

In order that our readers may more fully understand the circumstances under which the collision took place, we give the following diagram, showing the different roads to which allusion will be made in the account:



An inspection of this diagram reveals the fact that both the Hayward and the Western Pacific trains pass over a short section of road in common, on their way—the one to Oakland, and the other to Alameda. The testimony before the Coroner shows that the Western Pacific and the Alameda trains both left their respective stations on time, and ran upon time to the moment of colision, about 9 A. M., which occurred at the small break in the diagram, and about six miles from Oakland Point. The collision occurred in a wheat field, at a very low place, over which hang a dense bank of fog, about two miles wide, where it crossed the track. Had it not been for this fog, the trains would have seen each other and avoided the collision. The engine of the Western Pacific train had just passed a low culvert beneath which stands a small pool of water.

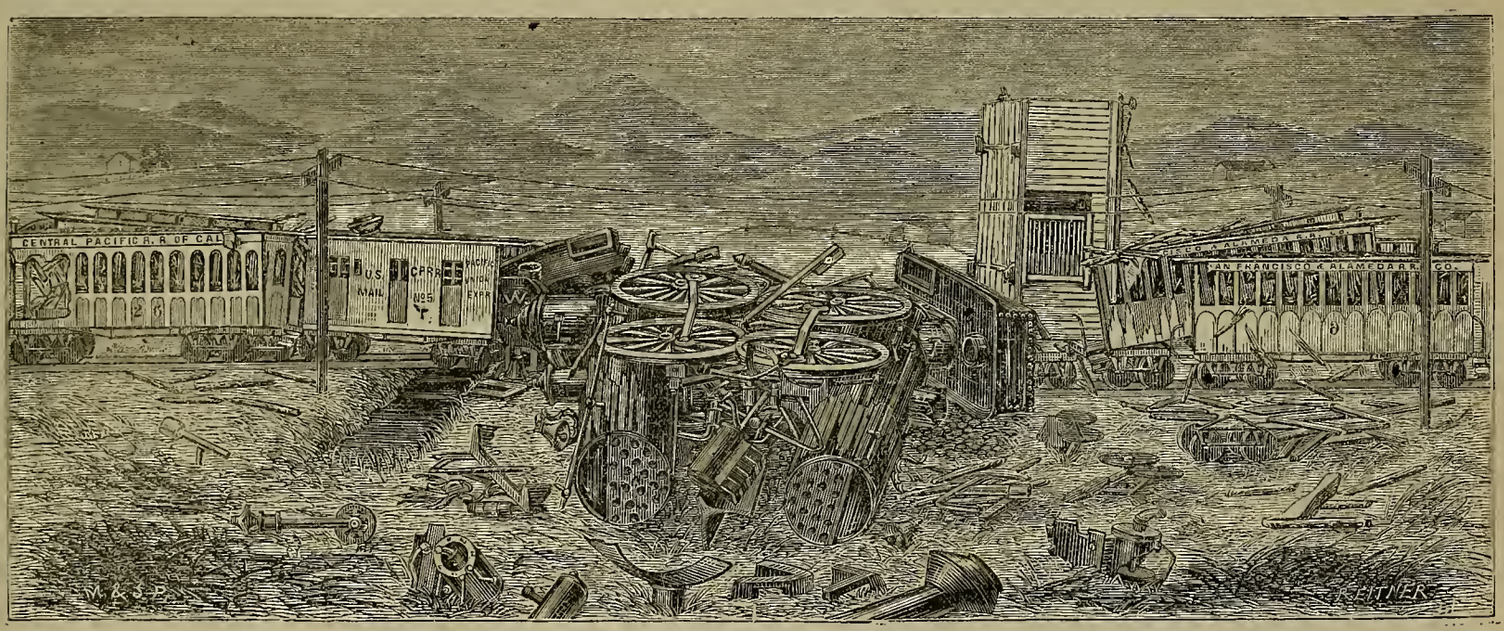
CAUSE OF THE COLLISION.

From the testimony taken before the Coroner, it appears that the time-table for Sunday, which differs from that of week days, brings the two trains at the junction nearest Oakland at very near the same moment; but requires the Western Pacific, in case it reaches there first, to wait until the Alameda train has passed. A switchman is stationed there, whose business it is to notify the Western Pacific, on its arrival, whether the Alameda train has passed. When that is not the case, and it is therefore known that the Alameda train is liable to be on the track, it is the business of the switchman to display a red flag, as a sign of danger, at sight of which the Western train stops. On Sunday last the Western train approached, as usual, and as no flag was shown, it did not stop, but slowed down, as though the engineer fearing that there might be a mistake, desired to learn verbally from the switchman whether the track was clear. The testimony clearly shows that the engineer received from the switchman both signal and word to "go ahead." He did "go ahead," and to swift and terrible destruction to himself and near a score of others. It appears that neither saw the other until they had approached within four or five hundred feet, when both whistles were sounded simultaneously, and the two trains, each moving rapidly, came together with a terrible crash.

THE COLLISION.

We would again refer the reader to the representation which we give above, of the appearance presented by the cars after the dead and wounded had been removed. From the position of the locomotives it is evident that they must have met like two huge monsters in deadly conflict, grappled, leaped high into the air, interlocking their forward or driving wheels, and resting upon their rear groups of bearing wheels; after standing thus poised for an instant, both fell over on the westerly side of the track, towards the point where the observer is supposed to stand. The ornamental brass work, wood work, railing, etc., of the locomotives, was stripped from both, and scattered here and there over the ground. A massive cylinder weighing 500 pounds is seen in the engraving where it fell, hurled twenty feet from its seat. The fancy brass cover of the sand box of the Alameda locomotive was thrown twenty yards forward and lodged on top of the express car of the Western train, as shown. The mass of broken iron, ruptured tubes, fractured wheels, crushed wood work, steam chests, cylinders, etc., immediately about these two locomotives, cannot all be shown in detail, but enough is seen to show in a most frightfully vivid manner the tremendous power and force which had produced all this ruin. The ornamental work of both tenders, with their contents, was scattered about, or piled upon the track. As the two trains crashed together, the lifting and overthrowing of the locomotives was attended with such a powerful recoil upon the track as to force the timbers of the road bed down six or eight inches into the gravel, bending the heavy iron rail to a corresponding deflection. The force of the collision was felt half a mile distant, producing an effect similar to that of the vibrations of a slight

[Concluded on Page 324.]



FEARFUL COLLISION BETWEEN THE SAN FRANCISCO & ALAMEDA AND WESTERN PACIFIC RAILROAD TRAINS.

Farming and Gardening.

The Peculiarity of Alderney and Jersey Cows.

These cows take their name from two islands situated near together in the British Channel. There is but little difference between the two breeds—in fact many consider that they differ only in name. The great value of these cows consists in the peculiarity of the butter made from their milk. The difference between such butter and that made from any other breed is most easily recognisable, and its superiority undoubted. Its texture is more firm, almost like wax. It does not oil like other butter. The warmest weather we have on this coast would scarcely produce any perceptible softening effect upon it; no ice is required to keep it moderately hard when served upon the table in the hottest weather of the Eastern States.

It is said six quarts of cream from these cows will produce seven pounds of butter, while a pound of butter from a quart of cream from the best of other breeds is considered a large average. With the generally acknowledged superiority of this breed of cows, it is singular that they are not introduced in greater numbers into the dairies of the Eastern—especially in those of the New England States. Californians, who are just beginning to look seriously into the dairy business, should have a special care in the selection of their stock; as much depends upon that as upon almost any other one thing connected with the business. A poor selection of stock will almost assuredly be attended with failure.

Difference in the Quality of Eggs.—Though many farmers keep fowls and raise eggs for their own use and for market, there are but few who are aware that there is any difference in the richness and flavor of eggs produced by well-fed hens, and those from birds who have been half starved or poorly fed. The difference in size has been always recognized, and should be taken into account in sales; but for some reason or other never has been; still the difference in quality is even greater than that. The yolk of a well-fed bird is large, fine colored and of good substance, and the albumen or white, clear and pure; while the contents of one ill-fed is watery and meagre, showing that the parent fowl has been unable to properly carry out and complete the work nature had sketched. In order, therefore, to have good eggs, the fowl should be well fed, and provided with an abundance of fine gravel, that they may be able to grind and prepare their food for digestion. Of eggs, those from the domestic hen are decidedly the best, but those of ducks and geese may be used for some of the purposes of domestic cookery.

Acre Values of Crops.—The National Agricultural Report for the present year, now in the binders' hands at Washington, gives the average value per acre of crops for 1869 as follows: Tobacco, $93; potatoes, $74; cotton, $32; barley, $31; buckwheat, $18; wheat, $17; corn and hay, each $16. The average yield of wheat in California is set down at 20 bushels per acre; oats at 30, and corn at 45. The per acre yield of wheat and corn exceeds that of any other State in the Union—the general average being 12 of wheat and 25 of corn.

Damp Wheat Lighter than Dry.—If we subject one measure of dry wheat to the action of a damp atmosphere, and keep another equal measure in a very dry atmosphere, the former will of course give a weight to the exact amount of water absorbed; but when we measure out one bushel of dry wheat, and another of moist, we shall find, on weighing the two, that the moist wheat is the lightest.

Wounds on Cattle.

The treatment of wounds on cattle generally is quite simple, nature being much kinder to these animals than she is to us; as instances, wounds that would in the human being puzzle the surgeon, heal readily in cattle, almost without any application. After removing any dirt or gravel which would cause irritation, or prevent it from healing, the first thing to be considered is the state of the wound. Is it a punctured or lacerated one? If a punctured one, it is necessary to ascertain its direction and depth, which having been discovered, should have injected into it the tincture of aloes and myrrh, and fomentation applied to abate inflammation. In cases where a wound runs downward and the matter, unable to escape, collects at the bottom and seems to be spreading, a seaton passed in at the original orifice and brought out at the lowest part of the pipe or sinues will do well. In the case of a lacerated wound, neatness in bringing the divided parts together is essential in promoting a speedy and perfect cure with the remedy applied; any portion so torn as to prevent this from being done completely, should be removed with a sharp pair of scissors or a knife; bringing the edges well together, retain them by passing a needle and strong waxed twine deeply through them, making the stitches half an inch from each other, then place a little clean dry tow over the wound, and cover the whole by a bandage, closely, but not tightly drawn. Do not if possible disturb this for a couple of days; then, if upon examination it looks well and is doing as desired, dress it with the myrrh and aloes spoken of above by soaking a pledget of tow in the tincture; should there be any indications of proud flesh bathe the wound before placing any tow upon it with a strong solution of blue vitriol. Many persons are frightened with the profuse bleeding which sometimes takes place from deep or lacerated wounds; unless some large arterial trunk is divided, there is little if any danger of the animal bleeding to death. Sufficient blood, however, may be lost, to very materially interfere with the condition of the beast and leave lasting weakness; anxiety therefore, to stop the blood as soon as possible is not misdirected.—*American Stock Journal.*

Strawberries Grafted in Roses.—Among the late curious experiments of a Parisian florist has been the production of the very pretty novelty of roses blooming, and strawberries growing, on the same stem. This object is accomplished as follows:

In the autumn, a few common roses of good kinds on their own roots are planted in pots, at the same time a well-rooted strawberry vine, in good bearing condition, is placed with each rose and planted just beneath the stem of the rose. In the spring, when the runners push out, two or three of them are tied up to the stem of the rose. It is well known that the runners of the strawberry soon make their own roots, and in due time these roots are cut off, making the cuts as for a scion, and then grafting them into the rose-stem without cutting away the runners from the parent plant in the ground. They should be cultivated with great care to induce the sap upwards to the scions, cutting off all blossoms and many leaves from the parent plant. Thus treated, the strawberries will blossom and bear perfect fruit upon the rose-tree for some time, and present a most attractive appearance.

Diversified Agriculture.—The Los Angeles *News* says that a gentleman in that neighborhood has recently procured a tract of land to be devoted to the culture of small fruits for the home market, the supply of which has heretofore been quite too limited. Diversified agriculture is one of the wants of the State generally; and every step in that direction is one taken in the path toward general and permanent prosperity.

California Potatoes for Europe.—The Danish Consul of this city, Mr. Taaffe, has sent several boxes of selected California potatoes to Denmark, to be used as seed, with the hope that they will escape the rot, from which the north of Europe potato crop has suffered greatly for a number of years past. A similar shipment was made some ten years since to Scotland for the same purpose, and with most excellent success.

Stockton Correspondence.

[Written for the Mining and Scientific Press.]

Editors Press:—Stockton is most advantageously situated in the center of an immense agricultural region. I was expecting to find prosperity here; but was not prepared to see so much solid growth and activity. It is already in steamboat and railroad communication with San Francisco and the upper country, with a speedy prospect of a railroad the whole length of the great San Joaquin Valley south. Stockton is a lively, bustling "town," steadily and rapidly increasing in population, wealth and business; now the third city in California, it is a "candidate for second." It is already

A Manufacturing Town

Of no small importance; not of the finer fabrics of the loom, which must soon add its woof, but of the equally useful products of skilled labor applied to wood and iron. Iron works, machine shops, foundries, wagon and carriage factories, lumber-dressing mills, steamboat building, flouring mills, windmills, blacksmith and harness shops, large agricultural works, etc., attract attention, and many things demand special notice.

The Globe Iron Works

Of Messrs. Keep & Bargion, we of course visited. Supplied with the best of machinery, and employing the best of workmen, this establishment is not behind the times in usefulness. Here we found high and low pressure steam engines in progress of construction. The portable engines turned out at this establishment are nowhere excelled. Their boilers are especially adapted to the kind of fuel to be used—an important desideratum. They justly claim that their machinery is, in many respects, superior to any imported. Their horse-powers and the pumps of their own invention and patent, are certainly very superior. Messrs. Keep & Bargion also manufacture all kinds of mining and milling machinery, and cast house fronts and iron and brass mouldings of every description. They are the sole agents of Root's patent force blast blower, one of which afforded so much amusement at the late Mechanics' Institute Fair. I saw several in process of manufacture to fill orders. As the demand for mining machinery decreases, more attention is being given to the manufacture of farming implements.

The Stockton Iron Works,

Farrington, Hyatt & Co., proprietors, also form a creditable establishment, which appears to be full of business. These works are connected with the establishment of Matterson & Williamson, manufacturers of agricultural machinery, much of whose work is done by the Stockton Iron Works Company. A general view of

Matterson & Williamson's Agricultural Works

Is attended with much interest. Agricultural machines crowd the streets and sidewalks in the vicinity of the works, including plows, single and double, in three, four, five and six gang; plows for breaking and for stubble, for light soil and adobe; small and large plows, iron and steel cultivators, chisel and shovel teeth, harrows, seed sowers, horse-shoes, wagons, combined headers and thrashers, etc. It is a treat to visit such a shop as this, where the large buildings and sheds are all occupied by busy workmen, half hid in the whirling maze of humming machinery. In the midst of seeming chaos and confusion of fire and smoke and unearthly din, order reigns, and cheerful Labor asserts her peaceful power.

Matterson & Williamson have been farmers, and know what farmers need. They have obtained seven patents for useful inventions, and have invented many improvements not yet patented. Their first patent was as early as June, 1858, for a gang-plow; and I was assured by them that it is to-day a better gang-plow than many late patents. They also invented an improvement in double-edge reversible mould-boards and curved standards for plows. This is a very valuable plow, in an economical view. All of their gang for broken soil are of this description. Of simple construction, light, cheap and durable, they give universal satisfaction; and when any part gives way, it can be replaced from the manufactory. They have also patented an improvement in gang-plows, consisting of superior draft bar and castor wheel attached to single arbor. Also, an improvement in horse hoes, by making a straight, reversible self sharpening hoe; an improvement in horse hay forks, and an improvement in elevators, and table for feeding grain separators. They are the first inventors and patentees of the celebrated chisel cultivators; and they declare all other such cultivators to be infringements of their patents; but that, like many other patentees, they have been injured by parties using their invention for the same purpose, and involving the same principles claimed by them.

Mr. B. J. Marvin, the inventor of

Marvin's Patent Combined Header and Thrasher,

We found hard at work at this establishment, as he has been for the last ten years, and still inventing improvement upon improvement towards the perfection of his machines. Already a success—saving more than one-half of the expenses of harvesting and thrashing over the old headers and stationary thrashers—it must eventually supersede other harvesters. I have the assurance of Mr. John Fisher, a farmer near Stockton, who owns and has tested one of these machines thoroughly, that Mr. Marvin's patent combined header and thrasher will save three-fourths the expense, including wastage, of harvesting and thrashing, over the best single header and thrasher in use. It is claimed that with this machine three men and twelve horses will cut, thrash and sack twenty acres a day on an average. One thousand dollars or more saved on every 500 acres of grain harvested is too solid an argument to be resisted.

There were five of these machines sold last season, and several more are now being made for the coming season. Mr. Marvin showed me two very valuable improvements which he has recently made in his machines, and which will add greatly to its ease of motion and effectiveness in separating and saving the grain. These will be patented; and when applied, must recommend themselves to every practical farmer.

S. H. H.

[concluded in our next.]

Saving Seed Potatoes.—In saving potatoes for seed it is recommended that the tubes of such plants only should be selected as come to perfection earliest. Select the healthiest hills and avoid every plant for seeding purposes which displays any tendency to disease or departure from the characteristics of its own variety. If as much care was exercised in the selection of seed potatoes as there is in the selection of almost all other seeds, far better results would be met with than is now generally the case. Potatoes when designed for seed should be stored in a cool, dry, dark place and kept separate from the bins where the other lots are stored.

Sugar from Sweet Potatoes.—Recent experiments, it is said, have shown that by a powerful pressure ninety per cent. of the weight of sweet potatoes can be obtained in the form of a fluid, which will yield from ten to eleven per cent. of sugar. Careful cultivation might, no doubt, increase the sugar. Further experiments are to be made with the view of testing the value of the potato as a substitute for the sugar beet.

Preserving Potatoes.—We have mentioned in another item the shipment of small quantities of potatoes to Europe, for seed. One of these shipments was made some years ago, by the way of Cape Horn, and arrived in most excellent condition, although they were twice exposed to the passage of the tropics. They were packed in charcoal dust, which may hence be considered a most excellent medium for preserving potatoes.

Agriculture in Arizona.—Flour is selling in Prescott at $36 a barrel; butter at $2 per pound, and eggs at $2 per dozen.

Mechanical Progress.

The Velocimeter.

This is a new and ingenious apparatus for registering the rate of speed in running machinery, lately patented by a Missourian. It may be described as follows: There are two dials; an upper one, which is that of an ordinary clock, and a lower one figured from 0 to 60 or higher, which shows the number of revolutions per minute which the wheel attached is making. The index of this second dial is carried by a pinion moved by an upright rack-bar, in which is a pin resting upon a volute cam, or eccentric. This cam is so connected with the running machinery, the speed of which is to be recorded, that it rotates from left to right,—but is so connected also with the clock-work above, that it continues to rotate only three seconds at a time; that is, if that be the period taken as a unit in the construction of the apparatus. Now the faster the machinery is running, the more of a complete revolution will the cam make, and of course the higher will rise the rack-bar, and the farther round the dial will the index sweep. At the end of the three seconds, the cam stops and falls back to its starting position, and goes again through the same movement. The rack and pinion retain their position by means of a ratchet arrangement, unless the speed changes; so that the index remains stationary as long as the speed last indicated remains the same.

Attached to a locomotive, the index may note the number of miles per hour at which the engine is running.

The *Scientific American* of Nov. 13th illustrates and describes this apparatus, and says: "But the performances of this ingenious instrument do not stop with the mere indications of speed. It also records it; so that one may know at any time afterward the exact speed that was being made at any previous minute. A cylinder, by connection with the clock movement, is caused to revolve once per hour, winding upon itself a strip of paper from a spool. This paper is ruled with horizontal and perpendicular lines, similarly to that used on the steam indicator. A pencil fixed in the rack-bar marks the passing paper higher or lower as the speed is greater or less for the time being. The perpendicular lines indicate the minutes of time, while the horizontal ones represent the velocity. When the locomotive stops, the pencil will descend to the lowest horizontal line, and will there make its continuous mark, reporting the exact duration of the stoppage."

This registering apparatus is so arranged that it may be locked up within the instrument, and made inaccessible to any one but the keyholder. The paper may be replaced daily or oftener. Railroad officers may thus have in their possession an exact history, as to speed and stoppages, of the movements of every train upon their road; and an engineer will always have an indisputable witness, in his favor or otherwise as the case may be, to the speed at which he was running at the moment of an accident.

The Root Boiler.—This is made of wrought iron tubes, connected at their ends by cast iron heads and cast iron three-way elbows. Each tube is connected in this way at each end with three others, viz.: one above and two below, or two above and one below—these connections being alternately reversed. In this way a perfect circulation is obtained, and the steam enabled to rise freely through the water. This circulation is facilitated by the inclined arrangement of the tubes, which makes a number of the upper ones, which are only partly filled with water, serve as steam-drying tubes. The steam is collected in a transverse drum above."

Broom Sewing Machine.—The *Artisan* illustrates and describes a machine for this purpose, which has been on exhibition at the Fair of the American Institute, and which is the first ever devised. It is spoken of as being a perfect success, and as destined to work a revolution in broom-making. It attracted much attention and received a special premium. G. Stackpole, of New York, is the inventor.

Annealing Large Castings.

The *Practical Mechanics' Journal*, in an article upon the Palliser chilled shot, says the great drawback to the success in practice of the hardened cast iron projectiles has arisen from a tendency to burst before leaving the gun, the angular fragments scoring and wearing the rifling, so that the piece is soon rendered worthless. The reason of this is plain. The metal, when cast, hardening first at the surface, has its internal portions held under permanent tension—a tension so great that in some cases the shot have been known to split without any apparent cause while piled in heaps in the arsenal. Large iron castings have been known to burst on the removal in the lathe of the tough outer skin. In the chilled shot the exciting cause is the sudden heating and expansion of the shot by the surrounding gases. The remedy lies in providing for homogeneity in the structure of the projectile. This may be accomplished by the use in the first instance of white iron, in which case no chilling would be necessary; but with ordinary metal cast in chills, the hardening, however perfect at the outer portions, cannot reach the core of a ten-inch casting, and the desired uniformity is wanting. The plan suggested is to move the cast projectiles from the chills as soon as the metal has "set" nearly or quite to the core; place them in an oven heated to from seven to eight hundred degrees, and suffer them to remain, guarded from oxydation by influx of air or gases, until the gradual lowering of the temperature has brought them to the requisite cool condition. The time required for annealing in this manner a ten-inch solid shot is estimated at from ten to fifteen days. The method is worthy of testing by manufacturers who may have occasion to turn out chilled castings of any considerable size.

New Mode of Sharpening Files.—M. Wedermann's plan is as follows: Well-worn files are first carefully cleaned by means of hot water and soda; they are then placed in connection with the positive pole of a battery, in a bath composed of forty parts of sulphuric acid, eighty parts of nitric acid, and a thousand parts of water. The negative pole is formed of a copper spiral surrounding the files, but not touching them; the coil terminates in a wire which rises toward the surface. When the files have been ten minutes in the bath they are taken out, washed, and dried, when the whole of the hollows will be found to have been attacked in a very sensible manner; but should the effect not be sufficient, they are replaced for the same period as before. Two operations are sometimes necessary, but rarely more. The files thus acted upon are to all appearance like new ones, and are said to be good for sixty hours' work. M. Wedermann employs twelve medium Bunsen elements for his batteries.

New Method of Setting Tires.—A late English patent is for contracting the wheel,—instead of expanding the tire,—while the setting is being accomplished. This is done by hydraulic pressure. "As the pressure is applied and the wheel contracts, it is made to descend into a funnel-shaped support, so that when the external pressure is taken off of the rim, the pressure upon the hub, giving dish to the wheel, being still maintained, the contraction of the rim is kept up till the tire is placed around it. The hub being next released from pressure, the elasticity of the woodwork carries the hub back to its normal position with refereuce to the other parts of the wheel, a general expansion takes place, and the tire becomes permanently set."

Frictional Gearing.—A compressed elastic frictional gearing has been devised by Mr. Henry Hall, of Burton, which is likely to be extensively adopted. The invention consists in facing the wheels with hardened and compressed india-rubber. It is pointed out that among the advantages which the improved gearing possesses, especial prominence should be given to the facility and safety with which the gearing may be thrown in and out of action at the highest velocities. Its noiseless, smooth, and steady action, together with its cleanliness, are great recommendations, whilst its value as an economizer of power, cost and maintenance to all who employ extensive machinery is incalculable. With the improved gearing a greatly increased number of revolutions may be made without fear of injury or breakage.—*London Mining Journal, Oct.* 16.

Scientific Progress.

Gutta Percha and Caoutchouc.

Prof. Wurtz proposes to give, from time to time, notes of Berthelot's progress in his new general method of synthesis by *Hydrogenation*. This method is destined,—Prof. Wurtz thinks,—to exert an extraordinary influence in building up "the grand edifice" of Carbon-Chemistry. It is founded upon the idea of employing some hydrogen-compound of simple constitution and unstable nature, containing hydrogen in a *quasi* nascent form. Hydrosulphuric and hydrochloric acids have had applications of this kind; but to both there are objections. Berthelot's invention consists in the general application of *hydriodic* acid in this way. The fecundity of this new method of investigation is already astonishing. The first of those notes given in the *Chemical Excerpta* are upon the properties of the substances named in our heading.

"To throw some light on the question of the hypothesis often entertained that these hydrocarbons are derivatives of the *camphenic* series, or of very elevated polymeres of this group, Berthelot has submitted them to his method of treatment with a known amount of concentrated hydriodic acid. Pure hydrogen was evolved, whose measured volume indicated a residue of hydrogen left in combination, in the proportion of 0.0142 gramme of H for half a gramme of gutta percha, corresponding, as Berthelot inclines to think, to the formation of a saturated carbon of a very high equivalent, $C^{80}H^{82}$. The product, contrary to his expectation, contained no carburet volatile at low temperatures, or even below 360° C. It is *viscous*, and similar to melted caoutchouc. When heated, it puffs up greatly, through vaporization of intermixed water, to get rid of which is a slow and troublesome process. After this, it distils above 350° C. to an almost colorless thick and viscous mass. This product has the general reactions of the formenic hydrocarbons, resists bromine, cold fuming nitric and warm fuming sulphuric acids, etc. Caoutchouc behaves exactly like gutta percha, the product seeming probably a little more solid and less volatile, of which nevertheless he is not sure. The products, freed from water, did not solidify in eighteen months; but the mass offered, notwithstanding, some indications of crystals. These facts, he remarks, tend to remove caoutchouc and gutta percha from the camphenic group."

Although this product is made up of saturated hydrocarbons, as is *paraffine*, still its lack of tendency to crystallization inclines Berthelot to the belief that it does not belong to the same series as do the hydrocarbons of petroleum.

Prof. W. remarks in this connection that his *viscosine*,—noted in the abstract of his paper on Grahamite, which we gave in our issue of Oct. 30th,—should have been spoken of as the first *native* viscous hydrocarbon as yet distinctly isolated:—that having been his idea at the time of writing. To call it the *first* would not be correct, Berthelot having previously observed several.

The new Anæsthetic.—Dr. Richardson read a paper on chloral hydrate before the British Association in August at Exeter. From numerous experiments he concludes as follows: (1) Chloral hydrate administered by the mouth or by hypodermic injection, produces as Liebreich states, prolonged sleep; (2) the sleep it induces, as Liebreich also shows, is not preceded by the stage of excitement, so well known when chloroform is administered by inhalation; (3) the narcotic condition is due to the chloroform liberated from the hydrate in the organism, and all the narcotic effects are identical with those caused by chloroform; (4) in birds the hydrate produces vomiting in the same manner, and to as full a degree, as does chloroform itself; (5) the sleep produced by chloral hydrate is prolonged, and during the sleep there is a period of perfect anæsthesia; but this stage is comparatively of short duration; (6) the action of the hydrate is (as Liebreich assumes) first on the volitional centers of the cerebrum; next on the cord; and lastly, on the heart.

Dissociation.

In the November number of the *Journal of Applied Chemistry*, Prof. Chas. A. Joy has an article, in which he gives an analysis of the pricipal papers published upon this subject, from 1857 to the present time. The original articles amount, he says, to scarcely more than twelve; and these are scattered through journals in four languages.

The theory was enunciated by Deville in 1857 before the French Institute. It was that compound bodies could be separated by heat into their elements, and that the temperature of this "dissociation" for each body could be measured. From time to time since that date, he has published experiments in this direction. M. Cazin in 1868 says that the discovery establishes a remarkable connection between the molecular attraction of physics and the elementary attraction of chemistry. Dumas says it is one of the most scientific steps in modern times. Naquet thus states the doctrine: "M. Deville has been led to conclude, from his experiments, that in the decomposition of bodies by heat the phenomena are the same as in the vaporization of liquids. As the change of a liquid to the gaseous state requires a certain quantity of heat, which is entirely absorbed (becomes latent), in the same manner a compound body in order to be reduced to its elements, absorbs a quantity of heat equal to that which it disengages when it is re-combined."

Several recent geological writers have had recourse to dissociation to explain the origin of rocks. Sterry Hunt is one of these. Prof. Joy says: "It is somewhat remarkable that so important a discovery should not have been more generally discussed, and that the doctrines should not have found place in more of our best text books on chemistry. The technical applications of dissociation are of sufficient importance to attract the attention of engineers and inventors in all departments of chemical and metallurgical industry. If by an ingenious device we can dissociate water and appropriate its elements to our use; if we can change the form of our blast furnaces so as to use the dissociated gases before they re-combine on cooling; if we can as definitely fix the law of the tension of dissociation as we have determined it for the tension of vapors; if we can destroy and build up at pleasure by the application of the principle of dissociation, we shall be prepared to accord to Henry St. Claire Deville, for his grand discovery, a place in the front rank of the benefactors of his race."

A New Method of Demonstrating the Form of Flames.—The flame of a candle is a hollow cone, luminous on the outside only. To demonstrate this, M. Dufour cuts the flame by means of a sheet of water. The *Chemical News* thus describes the arrangement: A caoutchouc tube has, at one of its extremities, a gas jet; this jet has an almost semicircular slit of 0·4 m.m. in depth. The other end of the tube communicates with a reservoir of water placed at a convenient height. Upon a suitable pressure, the water flows out by the slit in the jet, producing a clear sheet, capable of preserving, for a sufficient length of time, an invariable form and size. The slit is placed in such a manner that the sheet presents a horizontal surface; and this will easily cut the flame of a candle, showing a perfect section. The hot gases and carbonaceous particles are carried off by the water. On placing the eye above the hollow cone, the luminous wall, etc., can be distinctly seen. Sections may easily be made near the wick or near the point.

M. L. Dufour suggests that this might be of service in the chemical analysis of flames. When a flame is cut by a sheet of water, the water draws off the gases. If the section be made with a sheet of air, it will be easy, by placing suction pipes throughout the length, and ending at fixed points in the interior of the cone, to collect the gases whose composition is desired to be ascertained.

Test for Prussian Blue.—Jerome Nicklés found that Prussian blue might be distinguished from the blue of indigo, or aniline, by means of fluoride of potassium, which bleaches it, while it does not so affect the other two.

[Continued from Page 321.]

earthquake. The first car upon the right, a baggage car, was driven upward and endwise with such force and in such a manner as to separate the body from its running gear and plant its lower end in the rear of the adjoining passenger car, while its entire body was thrown aloft and upon end, where our artist has correctly pictured it, standing, as it were, a monument of the surrounding ruin and destruction. The two first passenger cars of the Alameda train "telescoped," as shown, but not as completely as those of the Western Pacific, thus leaving more room for escape; moreover, there was also a less number of passengers on that train. Mr. S. P. Dunn, a passenger on the train, states, that he was sitting in the first passenger car, on the second seat from the door. When the crash came, his car was "telescoped" into the one adjoining, and the seats, furniture and *debris* of both cars thrown together in great confusion. Mr. D. was thrown with great violence, from his seat and badly injured. Mr. Presley Dunlap was standing in the center of the other car, talking with a friend. The car seemed to be driven back with great velocity. Mrs. Hoff and sister, of San Leandro, were sitting in this car, in front of Prof. Boulett, who was instantly killed. The telescoping car passed in and over the heads of these ladies, knocking them both to the floor, yet neither was injured beyond a few slight bruises.

Passing now toward the other end of the wreck, a baggage car (which is omitted for reasons already given) intervened between the express and the telescoped cars shown on the left. The scenes connected with this part of the tragedy at the moment of its occurrence we give substantially, as narrated by one of the passengers, Mr. Joseph L. Beard, to the reporters of the *Chronicle* of this city:

"At the instant of collision, Mr. Beard, who was seated in the smoking car which immediately succeeded the baggage car, felt that he was in the midst of a fearful accident. The car stopped with a jerk and the seats came piling up towards him, one on top of another, with fearful violence. The car next to the one in which he was, had "telescoped" into the one he occupied, and almost in a second the whole car was a wreck. Mr. Beard was seated near the front door of the car, and on the outside or passageway end of the seat. When he experienced the shock, Mr. Beard instinctively pressed his hands down upon the seat, endeavoring to raise himself, under the impression that the danger would come from beneath rather than from above; but although his effort was made immediately, it was too late to entirely save him from injury. Seats and passengers were crowded together and crushed by the death-dealing mass of wood and iron. The side of the penetrating car crushed Ehrman, who sat by Mr. Beard's side. On the opposite side, and just behind him, another unfortunate met his death, from a great beam of wood, which was hurled at him like a battering-ram of ancient time. Immediately in front of him and on a level with his head was the platform of the protruding car, bearing the horribly mutilated remains of the unfortunate brakesman, who hung upon its iron railing with disfigured countenance, both legs torn off and bowels protruding. Splinters, hats, iron bolts, pieces of cushion, clothing, torn flesh and great jets of warm blood flew over such of the survivors as were in the forward end of the car. The dying groaned and shrieked; those whose wounds were severe but not necessarily dangerous implored assistance, blasphemed or prayed forgiveness for their sins in their fright. Mr. Beard endeavored to extricate himself, but without success. His legs were tightly jammed among the *debris* of the wrecked cars, and for over an hour he was forced to remain in the company of the dead and dying, covered with the blood and brains of the mangled victims, before relieved. Strange to say, Mr. B. suffered no injury other than some severe bruises and contusion of the legs and a wrenching of the right foot.

The description given by this gentleman is vivid, and yet evidently the result of a calm and fair view of the situation. He speaks of the fearfully sudden transition from a sense of security and comfort to one of the wildest, most helpless confusion and devastation, as something beyond the power of man to describe with anything like distinctness. Death stared all in the face. No time was allowed for thought. When the accident occured, an instinctive, spasmodic effort at self-preservation was made by all; but, the immediate shock being over, the reality—in all its sober, sad, bloody details—forced itself upon the survivors. They were so hemmed in and confused by the ruins that they could know nothing of what more might be in store for them. The cars might take fire; another train might come in upon them through the fog and destroy the lives which had thus far been spared, and yet the survivors were powerless to aid themselves."

During the act of "telescoping" on this train, splinters of wood work, fragments of chains, iron and wood, filled the open space, and brought death or injury to several, who would otherwise have escaped. The appearance of this portion of the wreck, immediately after the collision, beggars description. Irregular fragments of iron and wood were thrown together in a confused mass, penning and holding in its midst human bodies, dead, dying, wounded and unhurt; while the cries of anguish, begging for help, which of necessity was slow to come, was a scene never to be forgotten by the eye-witnesses present. The scene here alluded to was confined to the open portion of the telescoped cars on the left. The end and extreme sides of the car were then unbroken, forming with the telescoped car a close room some six by eight feet in size, in which some twenty bodies, dead and alive, as above described, and the *debris*, as shown in the engraving, were jammed together in a confused and tightly-wedged mass. Against the rear wall, and near the corner next the observer, was the body of Judge Baldwin, pinned in nearly erect; from out the first window shown, hung a human head nearly severed from its trunk; across the hand rail of the platform of the emoking car which was telescoped into the passenger car, hung the dead body of the brakeman, who evidently died at his post, and was caught upon the rail before which he was standing, and in that position forced back through the partition of the car, and thus carried to near the farther end. The other bodies, living and dead, were wedged in as already described. There were no ladies in either of these cars.

Getting out the Dead and Wounded.

Of course, the first effort after the collision was to relieve the dying and wounded. Everything, animate and inanimate, was so firmly wedged and fastened in the mass, by the force of the shock, that the greatest efforts were required to liberate them; axes, hatchets, crowbars, levers, and jack-screws were required to perform that work, and it was fully an hour and a half before the last living body was removed. It is a marvel that any one in this car escaped with their lives. One fireman on each train was killed; also the engineer of the Western Pacific. The engineer of the Alameda train saved his life by jumping. Neither of the conductors were very seriously injured. With one or two exceptions, the deaths were all instantaneous, and but one, we believe, has died of wounds who was taken alive from the wreck. Immediately after the collision, the passengers and employés who escaped unhurt, proceeded to render every possible assistance in extricating the wounded. The ranchmen of the neighborhood, who heard the crash to the distance of full half a mile, also rushed to the scene, and did all they could to assist in extricating, and to relieve the sufferings of the wounded and mangled, after their liberation. Noble women were also there, who heroically or tenderly lent their aid, as the circumstances required.

The first thing done was to cut away the end and sides within which the mass of humanity already described was crowded. This was a very difficult and dangerous position and required much time. It seemed terribly slow to the sympathizing laborers, and doubly so to the poor sufferers within, to whom minutes seemed hours. The first person was not relieved until thirty-six minutes after the collision had occurred, care being first taken to put out the fires, so that the scenes of burning and roasting, as in a similar disaster in the Eastern States, might not be re-enacted here. Those last released remained in the wreck an hour and a half. As fast as the living were released they were taken to the uninjured cars and tenderly cared for. Medical assistance soon arrived from the neighboring towns and from this city. The dead were laid out in a ghastly row upon the wheat stubble, with paper or cloths covering their faces, and their heads resting upon cushions taken from the cars, until time and opportunity was had to more properly dispose of them.

The Killed.

Judge Alexander Baldwin, U. S. District Judge of Nevada; J. B. McDonald, Roadmaster of the Sacramento Valley Railroad; Prof. A. Boulet, Principal of Young Ladies' Seminary, Oakland; Chas. Martin, Fireman of Hayward train; Frank B. Milliken, Head Brakesman W. P. Railroad; Edward Anderson, Engineer of the W.P.R.R.; Geo. Thompson, Fireman W. P. Railroad; David Wand, dry goods dealer, San Francisco; James Conly, Corral station; Max Ehrman, Mission San José, Agent Bamber & Co.'s Express; B. H. Fox; H. Peterson, Corral Hollow; Thomas F. Sandoz, of this city. J. P. Lowell, of Sacramento, has since died of his wounds.

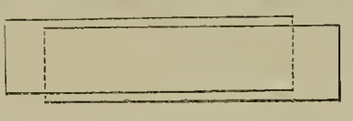
The Wounded.

Seth Bromley, Stockton Pilot; J. R. Heleus, San Francisco; James F. Capp, Amador Valley; Simon Meloche, San Francisco; Thomas McNulty, San Francisco; M. L. Taylor, DeKalb county, Ill.; G. Loighton, Rocklin, Placer county; Philip Ruly, Stockton; Noel Langton, employé; Patrick Mehon, San Francisco; E. F. Fitch, Consumnes; Joseph L. Perkins, employé; C. E. Needham, Banta Station; S. M. B. Haly, San Francisco. All the above were taken to Dr. Trenor's private hospital, near where the accident occurred. Judge William Campbell, of Nevada; Robert McLaughlin, brakesman; Robert Owens, conductor; J. L. Beard, Oakland; T. W. Finlayson, Washington Corners; Mr. Adams, Wells, Fargo & Co.'s Messenger; George Cadwalader, Sacramento; G. H. Downer, Sacramento; S. Buckley, Snelling's; two Chinamen were badly bruised.

A recapitulation of the above gives 14 dead and 25 wounded. The latter will probably reach to 30, as several were taken away by friends, whose names were not reported.

Telescoping.

In order to enable our readers to more fully understand the singular manner in which these cars were shoved in together or "telescoped," we append, in addition to the pictorial illustration, the following diagram, supposed to present the condition of the cars when seen from either end.



This diagram relates more particularly to those on the Western Pacific road. The underneath car, as shown in the engraving, sat firmly upon the track, while the roof of the upper car, torn from its flooring, shot over the roof of the lower one; the floor of the upper car, broken away from its truck, shot into the lower car, sweeping along for forty-two feet of its entire length of fifty feet, driving before it the passengers, seats, furniture, end walls, etc. The seats of both cars were dashed into confused heaps, and the wonder is that every person in them was not torn into shreds. As it was, but twelve men out of about thirty or more in the two cars were killed, although every one was more or less seriously hurt. The intruding ends of the cars were nearly all broken away, while the opposite ends of each remained nearly intact. The relative position of the sides of the cars is seen in the diagram. The roofs and the floors occupied the same relative positions to each other. Both trucks of the upper car were broken from their fastenings, and but for the force required to effect that, the telescoping would probably have been complete, in which case probably not a living body would have been taken from the under car. The telescoping in this case is said to have been the most complete of any occurrence of the kind known. The larger effect was probably due to the great weight of the silver palace cars, whose impetus could not be taken up, short of an almost complete demolition of the telescoping cars.

It has been a wonder with many, that the baggage and express cars, between those telescoped and the tender (the express car only being shown), were not crushed, rather than the passenger cars, as they had a greater weight in their rear, by the amount of that in the telescoped cars. An examination of the floor timbers of those cars affords an ample solution of the mystery—greater strength (for carrying heavy loads) and equal heights, which brought the timber heads directly against each other, endwise. These cars were, in all probability, also, heavier loaded than the passenger cars, which still further tended to prevent either from leaving the track, so as to "telescope." The great weight, heavy timbers, and general strength of a Pullman car, is said to be proof against telescoping; so also, we presume, of the new silver palace cars; while the light, frail-constructed, ordinary passenger car, yields readily to such action. A seat in such a car should always be avoided, when it is possible to secure the same in one more strongly constructed.

This was probably the squarest and most nearly matched railroad collision on record. The track was perfectly straight, so that the engines struck and "locked horns" squarely. The greater weight of the Western Pacific locomotive was about equally offset by the greater speed of the Alameda engine. The greater telescoping effect on the Western Pacific, as has already been stated, was due to the heavy palace cars in the rear of that train.

The Coroner's Verdict.

The verdict of the Coroner's jury, which was rendered on Thursday, attaches the entire blame to the "ignorance and incompetence" of the switch-tender at the "junction," who said to the engineer, "all right—go ahead." They further find that he deceived the officer of the company who employed him, with regard to his ability to read. As no warrant has been issued for his arrest, we presume the jury is of the opinion that "ignorance and incompetence" is no crime, even when a man deceives those from whom he seeks a position, involving the safety of human life; and even after it has been shown that such "ignorance and incompetence" has led to the destruction of more than half a score of human beings. It is certainly a little singular that, in the very face of a calamity, which has carried sorrow and mourning into so many families, and which has been caused by confessed incompetency, previously concealed, not even a word of condemnation is uttered against either the party himself or his employer. If "ignorance and incompetency" are not criminal of themselves, they certainly ought to be considered so, when thrust into positions, where life is endangered by their presence. There is no help for the past; but duty to the living seems to require that *something* should be done to prevent the recurrence of similar disasters.

Hose Test.—At a test of hose, by the officers of the Fire Department, on Saturday last, Mr. Fulton produced 2,400 feet, which was subjected to a test of 180 lbs—1,200 feet stood the test and 1,200 feet failed. Subsequently Messrs. Cook & Co. produced 1,100 feet, all of which stood the test. In general the tests and results were as follows: Five lengths, making 250 feet, were attached to the steamer and a "blind cap" was put on at the other end of the section. The first length burst at 121 lbs. pressure. The succeeding ones tried in its place burst at 80, 75, 125, 120, 125, 127½, 100, 122, 93, 112, 110, 125, 120, 125, 128, 120, 95, 110, 125, 120, 110, 120, 125, 120, 125, 105, 120, making in all twenty-seven lengths, measuring 1,350 feet.

Afterwards a section of five lengths, which stood the pressure of 130 pounds with a cap on was tried with a nozzle, one length burst at 180 pounds, another at 140 pounds, and a third at 160 pounds.

Arsenic in Carbonate and Sulphate of Soda.—Fresenius finds that arsenic is often present in carbonate of soda. A sample purchased as chemically pure, on being mixed with cyanide of potassium and heated in a stream of carbonic acid gas, gave distinct traces of an arsenic mirror. Five grammes dissolved in water and saturated with hydrochloric acid heated to 70° C. gave clear yellow flocculi with sulphuretted hydrogen. He traces the origin of this arsenic to the sulphuric acid employed in its manufacture, the greater portion of which is now made from arsenical iron pyrites. Specimens of sulphate of soda in the form of crude salt cake also showed traces of arsenic.

Dr. Hagan himself has started up and is engaged in operating one of his roasting furnaces in Colorado.

Nine ton of California slate, of excellent quality, were shipped through Stockton to San Francisco on Thursday, Nov. 4th.

A ledge of coal has been discovered on Pitt river, some distance from Fort Crook.

Stock Review.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, November 19, 1869.

Financial.

Money is not scarce in San Francisco, but it is difficult of access to all but first class borrowers. Those who fail to offer the best securities are apt to receive the "cold shoulder;" but for legitimate business transactions, merchants in good standing find ample accommodation at 1¼ per cent. per month. The drafts upon our savings and loan institutions are heavier than the deposits, and their ability to furnish the needful is correspondingly restricted, but we learn of no stringency or distress in any quarter. The Mint is actively engaged, and will probably furnish about $2,000,000 to the market during the current month. The removal of the Mexican export duties on treasure has already eventuated in a remittance of 70 tons of silver from that country, and is likely to bring us large additions. Bullion has been in fair supply during the week, and as our exports of treasure have been small, there is reason to believe that the money market will experience increased relief. An active and growing trade with the interior has been carried on with profit, and early returns may be reasonably expected. Grain bills must also soon add their influence to materially improve our financial status. The mines are yielding handsomely, and no more propitious weather than the State has been blessed with so far could have been desired. We find no cause to retract the opinion expressed in our last issue relative to the alleged scarcity of money. The lack of confidence, rather than the lack of means, was, in our opinion, the leading feature of our late stringency. It is gratifying to know that this is gradually disappearing. Gold bars range from 869 to 870, and silver bars sell at par. Currency bills on Atlantic cities pay a premium on gold of 25 per cent.; sight drafts, payable in coin, are effected at 1@1¼ per cent. premium; telegraphic transfers, 1½@1¾ per cent. premium; sterling exchange, 48¾d; commercial exchange 49½d; Mexican dollars command 5 per cent. premium; legal tenders, 78⅝@79¼.

The duties paid at the Custom House in this city from November 11th to date have been as follows:

November 11	$99,321 12
November 12	41,164 35
November 13	15,459 29
November 15	19,223 07
November 16	26,632 88
November 17	23,094 36
Previously in November	216,918 98
In November to date	$371,813 99
In October	830,257 95
In September	887,823 95
In August	769,589 56
In July	942,814 71
In June	674,051 81
In May	595,030 24
In April	554,882 05
In March	730,447 40
In February	692,340 00
In January	532,987 97
Total since January 1st, 1869	$7,543,049 63
Corresponding period, 1868	7,672,939 80
Decrease this year	$129,890 17

The exports of Treasure from Nov. 1st to date have been as follows:

Nov. 4—Per America—		
To China	$1,164,338 35	
To Japan	2,000 00	
		$1,166,338 85
Nov. 1 to 4—Overland to New York		22,000 00
Nov. 5 to 11—Overland to New York		209,815 08
Nov. 17—Per Golden City—		
To England	$350,514 41	
To France	55,559 82	
To Central America	10,000 00	
To Panama	20,000 00	
		536,074 23
Nov. 12 to 18—Overland to New York		45,000 00
Total since November 1st, 1869		$1,977,268 16
Previously this year		32,531,657 85
Total since January 1st, 1869		$34,508,886 01
Corresponding period, 1868		31,948,657 03
Increase this year		$2,560,228 98

The feasibility of resuming specie payments, or placing our financial dealings on a specie basis, is just now occupying a very large share of public attention, as it is the key to the elucidation of a thousand embarrassing questions of national importance. At no time since 1861 has the condition of the country been so favorable for getting rid of the yoke which binds all classes, unsettles all values, disturbs all business transactions, and plays with our national credit as if it were a fit subject for gambling. At the close of October the Government Treasury contained $62,000,000 surplus gold. The November sales of gold will be returned for customs almost as fast as got rid of, while the New York city banks held, at the date specified, $21,926,946 in coin, being much larger than the average hold of the same banks during the hard-money times before the war. In the meantime, the South has been accumulating large hoards of specie, paid for their domestic produce, and retained from want of banking accommodations.

The amount realized from sales of cotton in 1868 was $153,000,000, and it is estimated that the cotton exports for 1870 will reach $200,000,000. Planters have determined to receive nothing but gold for their products, having suffered too much from the fluctuations of paper currency. One never knows how much he may expect per pound for cotton sold to northern purchasers. A sudden freak of gold gamblers may depreciate the price two or three cents the pound; but for all that he sells abroad payment is had in coin. The system of advances upon crops, formerly in vogue between Northern capitalists and southern planters, exists no more. The crops of 1869 have been produced without extraneous aid, and planters are out of debt. It is clear that the South is in a better condition to place its business on a specie basis than is the North. Not so with the West, where many farmers are considerably involved. Were Wall Street operators deprived of the possibility of speculating in gold, which would be the legitimate result of resuming specie payments, millions of dollars in coin would flow into regular business channels, and gold would lose its fictitious value because paper would then be the true representative of gold, instead of the lever by which it is now depressed or raised, at the option of a clique. There can be no doubt that resumption is the one great need of the country, and is eagerly desired by all classes of the community, except financial speculators, whose chief wish is to procure inflation of the currency. Of course, nothing tangible can be done without Congress. Mr. Boutwell can make preliminary arrangements for resumption—can pave the way, and enter into an understanding with foreign capitalists for the loan of certain sums, but his views must be laid before the National Legislature for its consideration and approval, or rejection. Our financial status is far better now than it has been for nearly ten years; the productive capacity of the country is larger, more flourishing than ever, and shows a steadily increasing volume in home and foreign transactions. We are persuaded that many of the objections urged against resumption are either mere bug-bears, or are advanced in the interest of speculators. The policy pursued by Mr. Boutwell does not warrant the belief that he would take any important step with precipitate haste, without mature consideration, and on minute information as he can procure. Should the Government determine to rid the nation of its most galling yoke, we feel satisfied that it will be done with suitable precaution. Sufficient time and wide-spread notification will enable any one to prepare for the change. When the announcement shall come that Government will resume specie payments at a given date, it will be found that very few will demand coin for their paper, simply because that paper will be as valuable as coin. It will be found that there has been a great tempest in a tea-pot—a vast mountain struggling to produce a mouse. That the Government meditates an early resumption is scarcely subject for doubt. The thing can be done, and the country is in the best condition to accept the change. Every interest will receive a beneficent impulse, and all values will be definitely settled, involving the clearing away of much that is now dark and tangled.

City Stocks.

The public dealings in miscellaneous securities have been quite restricted for some time past.——During the past week we note the sale of a few shares of Spring Valley Water Company's stock at $62 87½@62 50.——The Black Diamond Coal Company has declared its first dividend of ⅝ per cent. on their capital stock of $5,000,000, amounting to $25,000 in the aggregate.

Mining Share Market.

During the period under review the mining share market has shown considerable activity, the recent advance of leading stocks continuing to be well maintained. The large sales of these stocks indicate a firm condition of the market, and with the important developments in the Hale & Norcross claim, as detailed below, the market is likely to continue firm for some time to come. The benefits to be derived from the Truckee railroad, now completed, will also greatly enhance the value of the Comstock claims.

HALE & NORCROSS—took a rapid upward stride upon the late rich discoveries on the sixth level. Mail dates to the 15th inst., state that cross-cut No. 2 had been carried through the deposit, showing a body of ore 27 feet wide, and that cross-cut No. 3 had already penetrated the ledge upward of 40 feet, without reaching the west wall—all in good ore, the face of the latter drift at this date—says the Superintendent—showing better ore than he had ever seen in the mine. Cross-cut No. 1 is in the vein some 12 feet, the face of the drift exhibiting excellent ore. Now the distance from cross-cut No. 1 to No. 3 is 115 feet, which gives a deposit of ore of that length that is 12 feet wide immediately beyond the shaft, and gradually expanding until it has gained a width of more than 40 feet without reaching the other wall. This, certainly, is one of the most important developments made within a long period. For the week ending November 13th the following ore statement is made: Upper mine—175 level, 124 tons; 300 level, 251½; 500 level, 321. Lower mine—3d station, 322¾; 5th station, 299¾, showing a total yield of 1030½ tons. They have on hand 2860 tons.

CHOLLAR-POTOSI—sold to a much less extent than last week. The ore extracted during the week ending Nov. 12th amounted to 874 tons, against 845 tons the previous week. We learn of no change of great importance since our last report. The quality of ore recently extracted is somewhat better. On the 16th inst., $21,526 in bullion was sent forward to the office of the company in this city.

KENTUCK—has again attained a high position in the stock market, sales having been more numerous at greatly improved prices. A dividend of $10 per share is payable since the 19th inst. The annual meeting takes place on the 24th inst. We expect to present a very interesting report of this company for the past fiscal year in our next issue.——IMPERIAL has declined. An assessment of $10 per share was levied on the 15th inst.

SIERRA NEVADA—sold to a larger extent than usual, but at a recession from prices obtained during last week. Work in the winze from the lower drift, at a depth of 43 feet, was retarded on account of the flow of water. They have started a drift from the old tunnel to intersect this winze, which will drain the water and allow them to prospect in virgin ground.——OVERMAN is inactive. "The sill floor of the 226 level continues to widen as we go south. The quality of the ore is much better than last week. The cross-cut west from the fourth floor, after passing through three feet of clay, is in ore 15 feet, and not through it yet. Amount of ore extracted during the week, 910 tons; average ear assays, $47 60; amount of ore shipped to mills, 859 tons. The raise in the 500 east is up 26 feet in more than average ore."

LUCK.—The Duke of Edinburg, while in Australia, was induced to invest in a claim which he visited, and which has since proved wonderfully rich, having turned out in one day 2,093 ounces of gold from 550 pounds of quartz, and on another day 2,036 ounces from 460 pounds; the appearance of the rock being described as "a perfect wall of gold."

Weekly Shareholders' Directory, for Meetings, Assessments and Dividends.

[Compiled for every issue, from advertisements in the MINING AND SCIENTIFIC PRESS and other San Francisco Journals.]

Comprising the Names of Companies, District or County of Location; Amount and date of Assessment; Date of Meeting; Day of Delinquent Sale; and Amount and Time of Payment of Dividends.

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT	DAY DELINQUENT.	DAY OF SALE.
Allegheny Cons., Sierra co., Sept. 24, 30c	Oct. 25	Dec. 6*
Bromide Tunnel, White Pine, Nov. 5, 2½c	Dec. 9	Dec. 28
Bucklin, White Pine, Sept. 30, 5c	Nov. 10	Nov. 30*
Belcher, Storey co., Oct. 7, $2 50	Nov. 22	Dec. 11
Crown Point Storey co., Nov. 5, $7 50	Dec. 9	Dec. 28
California Slate, Oct. 15, $1	Nov. 15	Nov. 27
Cons. Virginia, Storey co., Oct. 1, $1.50	Nov. 4	Nov. 20
Coney, Amador co., Oct. 14, $5	Nov. 20	Dec. 13
California S. M., White Pine, Oct. 19, $1.50	Nov. 22	Dec. 13
Chicago and Detroit Cons, July 16, 50c	Dec. 1	Dec. 27*
California, White Pine, Oct, 19, $1.50	Nov. 22	Dec. 13.
Daney, Lyon co., Nev., Oct. 13, $1	Nov 15	Dec. 4.
Evening Star Cons., W. P., Oct. 19, $1	Dec. 1	Dec. 20.
Hemet, White Pine, Sept. 15, 50c	Nov. 1	Nov. 22
Julia, Virginia Dist., Oct. 15, 50c	Nov. 18	Dec. 6.
La Blanca, Mexico, Nov. 5, $1	Dec. 4	Dec. 21*
Maxwell, Amador co., Sept. 22, $1	Nov. 1	Nov. 24
Morning Star, Alpine co., $1	Nov. 15	Dec. 6
Meadow Valley, Lincoln co., Oct. 9, 25c	Nov 11	Nov. 30.
Winchester, Alpine co., July 16, 6c	Dec. 4	Dec. 27*
Mammoth, White Pine, Oct. 28, 20c	Dec. 7	Dec. 28.
Noonday, White Pine, Oct. 31, 30c	Nov. 18	Dec. 9
Ophir, Storey co., Oct. 29, $2	Dec. 1	Dec. 22.
Silver Star, White Pine, Nov. 2, 15c	Dec. 17	Jan. 3.*
San Joaquin & K. R. C. Co., Oct 5, 10c	Nov. 8	Nov. 23
Segregated Belcher, Storey co., Oct. 22, $1	Nov. 23	Dec 11.
Taylor, El Dorado co., Nov. 16, 30c	Dec. 24	Jan. 10.*
Tecumseh, Calaveras co., $5	Nov. 17	Dec. 8
White Pine Mutual, Sept. 29, 50c	Nov. 8	Nov. 22
Wheeler, Esmeralda co., Sept. 20, $1	Oct. 29	Nov. 20

MEETINGS TO BE HELD.

Kentuck	Annual Meeting, Nov. 24
Original Hidden Treasure	Meeting, Dec. 11.
Taylor M. & M. Co.	Annual Meeting, Dec. 13.*

LATEST DIVIDEND.

Amador Co., div. $6 per share	Payable Nov. 8, 1869
Alpha Cons, Storey co., Nev, div. $2	Pay. June 19, 1868
Bacon, Storey co., Nev., div. $2	Payable June 19, 1868
Coney preferred Stock, div. 1½ per cent.	May 10, 1869
Crown Point, dividend, $7.50	Payable Sept. 12, 1868
Chollar-Potosi, div., $1	Payable Nov. 10, 1869
Empire M. & M., Nev., dividend $6	Payable May 15, 1867
Eureka, div. $7 50	Payable Nov. 8, 1869
Gould & Curry, div., $7.50	Payable May 15, 1867
Gold Hill Q M & M—dividend, $7 50	Payable July 13, 1868
Golden Chariot, Idaho, div. $3	Payable June 15, 1869
Golden Rule, Tuolumne co, div. 50c ₱ sh	Pay. Oct. 26, 1869
Hale & Norcross, div. $6	Payable July 10, 1869
Ida Elmore, div. $1	Payable Nov. 10, 1869.
Imperial, Storey co., Nev., div.	Payable June 20, 1868
Industry, White Pine, div., $1	Payable July 1, 1869
Keystone, Storey co., Nev., div. $2	Payable Dec. 1, 1868
Kentuck, div., $10 per share	Payable Nov. 19, 1869
North Star, dividend, $5	Payable Aug. 15, 1868
Occidental, div. $2	Payable March 2, 1869
Pacific Unassessable, div.	Payable June 18, 1868
Sand Spring Salt, dividend $1	Payable Jan. 5, 1869
Santiago, Silver City, dividend, $2 50	Payable Dec. 19, 1868
Savage, Virginia, Nev, dividend, $4	Payable May 11, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct 10, 1869
Virginia & G. H. Water Co., 1st dividend,	payable April 16, 1869
Yellow Jacket, div., $5	Payable March 15, 1869

Those marked with an asterisk (*) are advertised in this journal.

Latest Stock Prices Bid and Asksd.

S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, November 19, 1869.

MISCELLANEOUS STOCKS.	Bid.	Asked
United States Bonds, 5 20s, 1864, '65, '67, '68	$ —	—
United States Bonds, 5 20s, 1894	—	—
United States Bonds, 5-20s, 1862	—	—
Legal Tender Notes	78½	—
California State Bonds, 7s, 1857	95	—
San Francisco Bonds, 10s, 1853	par	& Int
San Francisco City Bonds, 6s, 1855	—	—
San Francisco City and County Bonds, 6s, 1858	85	87½
San Francisco School Bonds, 10s, 1860	100	—
San Francisco School Bonds, 10s, 1861	par	& Int.
San Francisco City and Co. Sch'l B'ds, 7s, 1866	90	—
San Francisco City and Co. Bonds, 7s, 1862	89	90
San Francisco City and Co. Bonds, 7s, 1864	89	90
San Francisco City and Co. Bonds, 7s, 1865	89	90
San Francisco City and Co. Judg. Bds. 7s, 1863	89	90
San Francisco City and Co. Judg. Bds, 7s, 1864	89	90
Sacramento City Bonds	35	40
Sacramento County Bonds, 6s	70	—
Marysville Bonds, 10s	75	80
Stockton City Bonds	68	—
Yuba County Bonds, 8s	85	90
Santa Clara County Bonds, 7s	76	77
Sutte County Bonds, 10s, 1860	75	—
San Mateo County Bonds, 7s	75	—
California Steam Navigation Co	45	—
State Telegraph Co	25	—
Spring Valley Water Co	62½	62¼
GAS COMPANIES.		
San Francisco Gas Co	87	88
Sacramento Gas Co	52	54
RAILROADS.		
Sacramento Valley Railroad	—	—
Omnibus Railroad	—	70
Central Railroad	56	—
North Beach and Mission Railroad	67	68
Front Street, Mission and Ocean Railroad	11	12
San Francisco and San Jose Railroad	—	—
INSURANCE COMPANIES.		
Firemans' Fund Insurance Co	96	98
Pacific Insurance Co	107	110
Merchants' Mutual Marine Insurance Co	500	520
California Insurance Co	—	1500
Union Insurance Co	91	94
Home Mutual Insurance Co	19¼	20
Occidental Insurance Co	85	90
People's Insurance Company	90	95
BANKING INSTITUTIONS.		
Pacific Bank	97½	100
The Bank of California	120	130
MINING STOCKS—WASHOE DISTRICT.		
Alpha	24	25
Baltimore American	—	—
Belcher	16½	17
Bullion, O. H.	—	10
Crown Point	15½	16¾
Cole (Va.)	—	—
Confidence	25	30
Consolidated Virginia	—	—
Chollar-Potosi	23½	24
Daney	1	1¾
Exchequer	11	11½
Empire Mill and Mining Co	60	65
Gould & Curry	84½	85
Gold Hill Quartz	30	32
Hale & Norcross	190	—
Imperial	50	51
Julia	25	—
Justice and Independent	3	3½
Kentuck	169	—
Lady Bryan	8	8¼
American	—	—
Occidental	15½	16
Ophir	14	14½
Overman	95½	93
Segregated Belcher	8	—
Savage	65	66
Sierra Nevada	11¾	12
Union	—	—
United States	—	—
Yellow Jacket	53	53½
MISCELLANEOUS MINING STOCKS.		
Amador (California)	280	300
Aurora, White Pine	16	18
Eureka, (California)	240	—
Golden Chariot (Idaho)	15	20
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

San Francisco Market Ratss.

Wholesale Prices.

FRIDAY, November 19, 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 50
Do. Superfine	4 25	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 10	@	1 55
Oats, ₱ 100 lbs	1 15	@	1 45
Barley, ₱ 100 lbs	90	@	1 15
Beans, ₱ 100 lbs	2 50	@	3 50
Potatoes, ₱ 100 lbs	75	@	1 25
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	6
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18½	@	19
Do. Rio	18½	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Ranch Butter, ₱ lb	50	@	60
Isthmus Butter, ₱ lb	23	@	40
Cheese, California, ₱ lb	20	@	22
Eggs, ₱ dozen	45	@	55
Lard, ₱ lb	17	@	18
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	40	@	50
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	40	@	50
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	60	@	70
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	—	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	—
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	25	@	30
Soap, Pale and C. O.	—	@	12
Soap, Castile, ₱ lb	—	@	20

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, November 19, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2¼c ₱ lb.

Scotch and English Pig Iron ₱ ton	$32 50	@	— —
White Pig ₱ ton	30 00	@	— —
Refined Bar, iad assortment ₱ lb	— 03	@	— —
Refined Bar, good assortment, ₱ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04¾	@	— —
Plate, No. 5 to 9	— —	@	— 04¼
Sheet, No. 10 to 13	— 04½	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5¼
Sheet, No. 24 to 27	— 05	@	— 6¼

COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb

Sheathing, ₱ lb	— —	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— 40	@	— 42½

STEEL.—English Cast Steel, ₱ lb | — — | @ | — 15

AMERICAN.—₱ lb | — 55 | @ | — 60

LEAD.—Pig ₱ lb | — 7½ | @ | — 8

Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9

ZINC.—Sheets, ₱ c | — 10½ | @ | — 11

BORAX.—California, ₱ lb | — 38 | @ | — 40

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Nov. 19, 1869.

We give the following as an approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		Per ton.
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	35 20	30 " "	75 00
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

These prices, corrected by W. T. Atwood, we believe will be found substantially correct, and can be realized at this date.

SPORTS OF VULCAN AND PLUTO.—A lava flow just reported by telegraph, near Papayan, New Grenada, has buried two or three villages and destroyed many lives. Soon after the eruption, the river rose to quite a height, and quantities of lava were floated by, thickly strewn with dead bodies. The next day the river was quite dry.

THE death of Judge Baldwin in the railroad massacre of Alameda elicits an expression of sorrow which is universal. Railroad men concerned will not flee the country; but our judges are backed by a public opinion to do justice to the switchman.

FOUNDRYMEN will notice in advertising columns reduction in price of coke at the Gas Works.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Lively Times.—*Miner*, Nov. 6th: The late strike in the M. C. Tunnel No. 3 and proof positive that it is a continuation of the Tarshish ore deposit, together with the forward movement by the Tarsbish Co. on their mine, has given an impetus to business in Monitor, and all goes lively.

Globe.—Another cave occurred in this tunnel some days since, and the Supt. is cutting a drift to the left to penetrate the lode at right angles. Water is coming in, and it is thought the long sought is at hand.

Ore from the M. C. M. Tunnel No. 3 is to be crushed and sent to Dall's mill, in order to determine the best mode of reduction.

AMADOR COUNTY.

Keystone.—*Ledger*, 13th: The American Co. at Amador City are enlarging their mill by adding 20 stamps, which will give them 40 in all. New boilers and other machinery will also be added. At present, with 20 stamps, they are taking from $25,000 to $30,000 per month.

Summit Mine.—We are informed by Mr. Tibbits, Supt., that they have struck in the 400-foot level, ore that will pay $100 to the ton. The ledge is one foot wide, and increasing.

Chlorination.—The newly-erected chlorination works at Sutter Creek, are in full operation, and work successfully. We saw a gold brick Sunday, from sulphurets taken from the Eureka mine.

BUTTE COUNTY.

Mining.—*Record*, 13th: The storm has compelled river operations to close.

CALAVERAS COUNTY.

Railroad Flat.—Cor. of *Chronicle*, 13th: Glencoe District.—Barney & Co. have just finished crushing their last lot of rock with a gross yield of $43 per ton; expenses of mining, hauling and crushing, $10 per ton. The Hilaria Co. have worked a lot of 40 tons, at the Vance mill, yielding $30 per ton, with an abundance of the same ore in sight. The Lewis Bros. are working what they call the "little vein." The only crushing made from this mine was a lot of 40 tons, in two parcels, first and second class, nearly equal in quantities. The first yielded $214 per ton, and the second $46! Since working the first lot they have been constantly taking out ore equally rich. The large vein alluded to as Lewis' first discovery, has been sold to Mr. Gasbwiler for $30,000. The main shaft, 64 feet in depth, with a 40-foot level at the bottom, shows a 3-foot vein of first-class rock, some of it rivaling the Palomo specimens. The south extension is owned by Sheldon, Folsom & Co., who are sinking a shaft. At the time of my visit they were down 30 feet, vein large, and prospects good.

Railroad District.—In placer mining, W. V. Clark, with a ditch 26 miles long, and miles of hydraulic pipe, is doing more to enrich the State than any other individual I know of. The quartz mines rank second to none. The Petticoat has, by actual measurement, 300 feet of quartz in the level on the vein from the bottom of the 200-ft. shaft. The level in one of its swells reaches a width of 14 feet; its average is three. In the head of the level the vein is solid five feet, and prospects $20 a ton. A heavier engine is to be purchased.

LOS ANGELES COUNTY.

Gold Discovered.—A Los Angeles telegram of the 10th is as follows: Gold-bearing quartz has been discovered at the head of the Placerito, 40 miles northeast of Los Angeles, by a Spaniard named Dolores Cordosa. The surface rock abounds with free gold. The region has never been worked. An assay will soon be made. Our entire lower country is being prospected by old miners, and rumors of great discoveries fill the air.

NEVADA COUNTY.

Eureka Mine.—Grass Valley *Union*, 10th: Yesterday the shaft was completed, and the miners celebrated the event. There was plenty of music, speaking and beer. To-morrow the Eureka will have its full complement of bands in all departments.

Empire.—We were favored yesterday with a sight of some of the specimens from the Rush & Laton ground, south of the main shaft. These were literally covered with gold, the heavy sheets of which ran through the rock from one side to the other. The ledge is about fifteen inches in thickness and shows well in gold and sulphurets wherever it has been uncovered. In the main shaft, in the 8th and 9th levels, the ledge is three feet, and gives out splendid rock.

Joe Perrin's Mine.—Same of 11th: The yield for the last month was $11,200 and the total expense was $2,058, making a dividend of $9,143. The ledge looks better the deeper it is worked. The rock can now be taken out much more rapidly than it can be crushed, and the miners are some six hundred loads ahead of the mill.

Good Ledge.—The Idaho Co. have three feet of a ledge between the fifth and sixth levels.

Hydraulics.—Same of 14th: The Brown Brothers, on Squirrel Creek, who own the best hydraulic diggings in the township, are preparing to make an extensive run as soon as the water comes. They have a large extent of untouched ground.

Omega and Diamond Creek.—*Transcript*, 10th: At both places, in quartz and gravel, the claims are being fitted up for extensive operations. A new boiler is being put in the Salatbiel mill, and the battery is increased to ten stamps. In this mine they have a large ledge, which is very rich. The hydraulic claims are being made ready for water.

Purchase of Claims.—*Gazette*, 11th: The Little York Water & Mining Co. have purchased the claims of Timmons and Pattinson, of Little York, and the balance of the Pattinson ditch for $14,000. This will give the company nearly all the mining ground around Little York and Liberty Hill. They have just finished enlarging the Pattinson and Maguire ditch at a cost of $5,000, They will use 2,000 inches of water the coming season. They have 10,000 feet of iron pipe carrying water to five sets of claims. The company have five of Craig's globe nozzles with a capacity of 400 inches each. They employ 20 men. The gross receipts last season from three sets of claims were $70,000.

New Quartz Mill.—The mortar for the new mill of the Vigilant Co. arrived on Tuesday, and has been put in place. The works will probably be started up to-day, but the machinery will not be ready for regular work before Monday. The mill is constructed on a new principle, the steam acting directly on the stamps, of which there are but two. The company have out a considerable quantity of rock, and the ledge being of good size, the mill can be kept supplied.

Big Blast.—On Tuesday, 175 pounds of powder were exploded at a single blast in the claims of Marselus & Maltman. The shock was felt a mile from the claims. The earthquake was the common talk the next morning, as it was not generally known that a big blast was to be exploded. From appearances the blast did better execution than usual—the surface of the ground being cracked in every direction, and for some distance.

Note.—"Rambler" sends some notes to the *Gazette*, among which are these: In the Grass Valley Consolidated, during the past six weeks, men working on shares, took out 60 loads of rock, which paid over $20 a ton. The Greenhorn mine is in a remarkable state of activity. The house is finished, and the mill will be ready to start the 1st of December. Union Hill is looking well. The lode in the shaft and in the drifts east, has greatly improved. The machinery and shaft work are in excellent order. George Batters Co. has commenced operations. The mine is one-fourth of a mile west of Union Hill. The property consists of 2,500 feet, divided into 25 shares, owned principally by working men.

Meadow Lake.—A Sierra Valley correspondent of the mines of the Downieville *Messenger* writes, Nov. 6th: "The rose-colored account of the mines at Meadow Lake, proves a baseless story. Parties have arrived in the Valley, bringing doors, windows and house-furniture, and declaring that all the processes have failed to get any gold in paying quantities from the rock. After four years' time and the expenditure of many thousands of dollars, the most tenacious prospector now is satisfied that there is no gold there, The once populous town of Meadow Lake will be entirely deserted this winter. S. P. Whipple, for some time owner of Fordycc Valley near the Lake, has sold to a stock man, and starts soon for his early home in Michigan."

PLUMAS COUNTY.

Snake Lake.—Cor. of Quincy *National*. Nov. 6th: W. H. Smith, prospecting in the Wahponsee creek, struck pay grit that has shelled out an ounce per day. It had been prospected all around, but the spot with the good pay in it was left for a stranger. Richards & Jenkins, below Smith, are bringing up an open cut to their claims, with good prospects as they go along—heavy gold. Jenkins & Co., on the hill, are drifting to the back channel, with excellent prospects. Metcalf & Haycock have their large reservoir finished, and filling for a test of their gravel bank. Lile Jacks is cleaning bedrock, with good results. John Colman, on the head of Pine Leaf, is ready, and waiting for water. He has excellent prospects. McCarger & Sharkley have good prospects of striking the blue gravel deposit on Quiou Sabe Ravine. They have sunk a shaft 25 feet deep, and struck blue gravel; but it pitched so fast into the water that they had to abandon it until they can reorganize with a larger force, to work night and day. Better prospects for lasting diggings I have not seen. All the miners are ready and waiting for the rains.

SAN DIEGO COUNTY.

Strike.—A telegram of the 10th says: San Diego is excited over the reported discovery of rich gold mines 60 miles from that town. Quantities of dust and lumps of gold worth $10 are brought in. The precise location is kept as secret as possible. Parties are leaving here for the new diggings.

SHASTA COUNTY.

Sold.—*Courier*, 13th: The Clear Creek ditch was sold at Sheriff's sale a few days ago for $3,000. The same property, in times past, figured on the assessment roll of the county at a valuation of $75,000.

SIERRA COUNTY.

Quartz.—*Messenger*, 13th: Ned Leonard has been running his quartz mill for a week, and the prospects are very flattering, considerable gold having been taken from the plates in front of the battery.

TUOLUMNE COUNTY.

Confidence Mine.—Sonora *Democrat*, 13th: The clean-up last week yielded $3,000. The owners are so well satisfied with the prospects that they are adding ten stamps to the mill, which will increase its capacity to thirty.

Half Gold.—We were shown this week some specimens of gold-bearing quartz out of a claim near Jamestown, which were fully half gold. The claim belongs to Lewis Male, who works it by himself.

Columbia.—Cor. Stockton *Independent*, 13th: Lew Alvison and J. B. Bacon, of Sonora, have struck rich pay dirt in their claim, in the mountains across the Stanislaus, half way between Columbia and Vallecito. They have been nearly a year running a tunnel. The pay dirt is four feet deep. Out of five cart loads (30 buckets each) they realized $160. They have found several coarse pieces of gold; one weighed $45.

The Haynes Bros. struck it very rich in their claim at Parson's Ranch, just as the water in the ditch failed. When the water comes they will take out large sums.

Arizona.

Wickenburg.—Prescott *Miner*, Oct. 30: D. Henderson returned from Wickenburg on the 28th. From him we learn that the Vulture Co's 40-stamp mill was crushing 80 tons of ore every 24 hours. The ore was paying nearly $40 per ton in free gold.

Big Bug.—The mill is now idle. It will be started up some time next week. Nearly 30 men are taking out ore, chopping wood, etc.

Sterling.—Mr. Garretsee yesterday informed us that he is ready to start the mill whenever water comes.

R. W. Groom and Geo. Monroe left for Wickenburg last week, to start work on the White Picacho mine.

Another Ditch.—Jos. W. Knott and a Mr. O'Toole are making a ditch to convey water from Granite creek to the creek banks on Dr. Moeller's ranch, where, from prospects already found, they hope to get good pay.

Colorado.

Montezuma.—Central City *Register*, Nov. 4th: The St. Lawrence Co. has its mill and smelting works completed. Mr. Collom has been running his new patent roasting furnace, with its mechanical rakes for stirring the ore. It worked satisfactorily. Taylor & Allen have drifted 25 feet on the Register lode. As a whole, mining has a cheerful look.

Struck It.—Reed & Morse, who have been working the Sanderson claim on the Bates-Hunter, have struck a body of splendid ore two feet in width, in the west drift.

Krom.—Jacob's Krom concentrator is reported to be doing well on silver ores. Twelve tons, yielding an average of $54 per ton, were so concentrated as to yield from $200 to $500.

Lake District.—*Herald:* The Williams lode, the surface quartz from which was very rich in gold, is now yielding very rich ore. The vein of solid mineral is about six inches wide, and assays 150 ounces silver and 1½ ounces gold per ton. It is a gray copper. Mr. Jones is working his claim on this lode.

Henry Paul has discovered a vein of silver ore, which proves to be very rich. He has named it the Bonanza.

Clear Creek.—Bennett, Wright & Co. have been working on Grass Valley Bar since the latter part of August without raising a color until a few days ago. Since the late storms they have been taking out $10 a day to the man.

The Terrific lode, Virginia Cañon, promises big. The ore vein is two feet wide, and assays $35 in gold and $53 in silver. The shaft is 15 feet deep.

Nevada District.—Potter & Hawley are running 15 stamps for Sabin, on ore from the Forks lode, which yields from seven to eight ounces of gold to the cord. Whitcomb's mill is also at work on rock from this lead.....Beverly keeps 15 stamps on Missouri ore. The Prize lode supplies Clayton's 12-stamper, and furnishes ore for George Kimball's mill in Black Hawk. B. C. Waterman is running his mill near Eureka gulch, on rock from the Gardner mine, and is getting the Kansas-Colorado mill in order.....The lease of Andrews & Sullivan, on the Jones lode, having expired, Phillips has taken possession and is working it. The yield at one time reached 32 ounces per cord.....Winders & Martin are working claim No. 6 on the Missouri lode. They have reached a depth of 180 feet, and have a fine crevice of five to six feet. Eighteen stamps of Woodbury & Norton's mill are crushing ore from their claim. Douglas & Dougberty are working claims 7 and 8 on the same lead. We are told that 80 stamps in Black Hawk are running on California quartz. The Ophir claim, Burroughs lode, is being worked by the men lately employed by the company. They are taking out ore which runs seven ounces.....The Hardy brothers are putting up a mill....The Chicago mill, which had been running on quartz from the Prize lode, starts up again to-day on ore from the same lead.

Mining Items.—Georgetown *Miner*, Nov. 4th: Specimens from the new strike in the Baker mine assay $960 in silver to the ton.....Conqueror is yielding $200 to the cord in gold....Last week at the Morris tunnel, Columbia Mountain, they passed through a lode four feet in width, carrying a narrow vein of sulphuret of silver....Whale lode at Spanish Bar yields largely....Wide Awake, Bruno Mountain, has a vein from four to twelve inches in width, of fine grained galena, carrying $130 in silver to the ton....Peter Smith says the Comet has a crevice 60 feet wide.....Highland lode is yielding first-class ore....On Monday we saw a mass of brittle silver from the Equator 1¼ inch long and ditto thick....Anglo-Norman lode on Columbia Mountain, assays $250 per ton.....L. Huepeden & Co. will commence crushing with their new machinery in a day or two....The dressing works of the Wilson & Cass Co. will commence operations soon....Rich strike in the Caledonia.....Baltimore tunnel stopped sinking to lay track. The vein is 18 inches....."Monster," on Republican Mountain, near the Par lode, promises to be first class.

Rich Strike in the Brown.—An assay of the selected ore made by Professor Cheever, gave a yield of $13,197.92 in coin per ton of 2,000 pounds. The rich ore is pronounced by our best judges and experts to be a new mineral. We acknowledge the receipt of a specimen weighing 15 pounds.

Bullion.—The total for the month is 17,163.26 ounces, coin value, $20,583.43, against $24,358.32 for September, a decrease of $3,774.89, owing to Stewart's being shut down for the past three weeks, and delays for necessary repairs at L. Huepeden & Co's works.

Republican Mountain.—Snowdrift is yielding large quantities of very rich ore, and depth is being rapidly gained in several shafts. At Sterling we saw 13 sacks of ore that will yield $1,000 per ton. The Sunburst has a 5-foot crevice and shaft 25 feet deep.

Cascade Lode.—This is on Sherman Mountain. The shaft is 45 feet deep; crevice four feet wide. Twenty-two hundred pounds of well-selected ore have been treated by Huepeden & Co., which gave a yield of $200 coin value per ton.

Idaho.

The Poorman.—*Wave*, 11th: Further developments confirm the opinion that this is a true fissure ledge, with solid wall casings and a sound vein of rich mineral. The transition from a broken up mass of rich quartz, mingled with granite found in bunches at intervals, to a solid, well-defined ledge, takes place at a depth of 450 feet, at which point there appears to have been at some period a breaking off and slipping

past each other of the two edges of the vein for a distance of nearly 70 feet, north and south, along the course of the vein.

KEYSTONE.—Capt. Myrick, of Portland, has purchased the interest of Mr. Firebaugh in the Keystone in Long Gulch. It now belongs to Myrick and Sayre, who have let a contract to sink a certain depth.

BAXTER.—Billy Hammond showed us a square block of ore from the Baxter mine on Thursday, taken that day from the bottom of the shaft, 260 feet from the surface. The piece is about a foot in length by four or five inches broad and say three in thickness. One side is completely covered with the brightest ruby and native silver—the other plastered over with chlorides just as it was taken from the mine.

LOON CREEK.—The *New Northwest* says: "Mr. John Perry, of Pioneer, just returned from the Loon Creek mines, reports great disgust, and says many are leaving the camp; houses are left half-finished, and crammed full of goods at low figures. Oregon flour was selling at $18 per hundred, having fallen $4 during the time he was there. The weather was extremely cold, and little work was doing."

Montana.

A DITCH ENTERPRISE.—Helena *Gazette*, Oct. 28th: Mr. Griffith is engaged by Mr. Marshall to survey a ditch from Trout Creek to the foothills. It will be 20 miles long, and will cost $35,000 or $40,000.

DIAMOND CITY.—Editorial correspondence of same: I saw in Confederate, last week, 22 ozs. of fine gold, from one and one half set of timbers in the main gulch. The prospects all along the gulch are satisfactory, and ou Boulder bar, opposite Diamond City, first rate. The gold is coarse. Some interest is taken in Gravelly Range, which is being prospected with energy.

RADERSBURG.—I found the Keating lode developed 1,600 feet in length, with a crevice all the way of from three to five feet; one shaft 96 feet deep, and the lode only ten feet from a perpendicular in that depth. I found Mr. Keating retorting a clean up of rock promiscuously taken, which resulted in a fraction of over $35 to the ton. $41, $45, and as high as $200, have been taken from the ton of rock out of this lode.

The Robert Lee is considered even richer than the Keating. It has a crevice three and a half feet thick; is well defined, and has been penetrated to the depth of 40 feet.

The Bully Boy is a rich lode, with a crevice four feet thick, and prospects satisfactorily.

The Leviathan has a crevice four feet thick; has a shaft 90 feet deep, and prospects average $60 to the ton.

The Ohio lode is rich, but owing to a want of scientific knowledge cannot now be worked. $60 to the ton has been procured from this rock.

They know the value of the quartz here, and will work it on arastras until able to build mills. I saw a retort of 80 oz. of beautiful gold cleaned up from Mr. Blacker's arastras from 20 tons. The quartz in the Keating is so much decomposed that it washes almost as easily as earth, and it is very profitably worked in arastras.

DIAMOND CITY.—Same of Nov. 4th: Prospects are improving. Several claims are taking out good pay.

PHILIPSBURGH.—Correspondence of the *New Northwest*, Nov. 5th: Progress has been reported in the matter of leasing the St. Louis & Mountain Mining Co's mill. We believe terms have been agreed upon and the mill is to be put in running order immediately. A competent amalgamator has arrived.

The Cole, Sanders & How Co., are progressing with the erection of their new separator, rapidly. Professor New assures us that if successful with the experiment, the machinery will be increased to one hundred tons capacity per day. Their mine, the Speckled Trout, shows a heavy body of quartz, rich in mineral. A shaft is now being sunk on No. 3. Work has been resumed on the Mountain Queen shaft, one hundred feet from the surface in the first level. The tunnel upon No. 3, Comanche extension, will soon be reopened, and discovery claims also worked for ores to supply the demand upon the commencement of operations in the mill. Nearly one thousand tons already await the whistle call.

IN PROGRESS.—Work is commenced on the Race Track ditch, leading to Prairie gulch. Thirty men will be at work next Monday. In thirty days of moderate weather, the flume bed—2¼ miles long—can be built.

Nevada.

COPE DISTRICT.

SUNNY HILL MINE.—Elko *Independent*, 10th: Reports have reached us that the Sunny Hill mine is developing beyond all expectation in richness. The shaft is disclosing large bodies of ore of the very choicest character.

ARGENTA.—An Elko telegram of Nov. 10th says: Another shipment of 12,000 pounds of ore from the Argenta mine was received here yesterday, to be shipped to San Francisco to-day.

Another of 12th: The new mill for Cope arrived here to-day from San Francisco.

The *Enterprise* of 12th has seen a letter from Carl York, the musician, now at Cope, who says it is the richest mining district on the coast. The letter contained a specimen of placer gold.

HUMBOLDT.

ALASKA MINE.—*Register*, 6th: In 1863 the Croesus was a rich specimen gold ledge. Much money was spent to no purpose in running tunnels and sinking shafts. Messrs. White & Wentworth still, however, had faith, and recently sunk a shaft in the place where they thought there ought to be a mine, not far from the old Croesus location. The result was a 20-inch vein near the surface. They are now 30 ft. down, and the ore assays $150 in silver and $750 in gold. It is called the Alaska mine.

REESE RIVER.

FINE YIELD.—*Reveille*, 11th: We saw this afternoon a certificate of assay of the pulp of 20 tons of ore from the dump of the El Dorado South, in the district of Silver Bend, the yield of which was at the rate of $192.47 per ton. The El Dorado is a true fissure vein of immense size, and is loaded with ore of a superior grade.

RAILROAD ORES.—The ores of the Railroad district are mainly copper of a high grade; but we saw a lot to-day in which silver existed, as shown by assay, all the way from $30 to $50 a ton.

EUREKA DISTRICT.—Carlin telegram of 12th: W. W. Coy shipped yesterday, from the Eureka district, 128 bars of bullion, weighing 15,000 pounds, valued at $5,000. The bullion was consigned to T. H. Selby & Co., of San Francisco.

THE STETEFELDT FURNACE.—The chloridizing works at Reno are a success. The *Reveille* says: "We predict that this furnace will produce a revolution in the silver-producing regions. The short campaign at the mill at Reno has given a value to hundreds of mines in this State alone. In such districts as Bunker Hill, Silver Bend, Cortez, Columbus and others, where there are large bodies of ore of a low grade, the advantage of the Stetefeldt furnace is simply inestimable. By its use, worthless ores, by thousands of tons, may be utilized and their precious metals reclaimed."

WASHOE.

OPHIR.—*Enterprise*, 14th: The water stands some 250 or 300 feet high in the main shaft and no attempt is at present being made to drain it. Machinists are at work upon the new engine, which will be in running order this week, when a new hoisting tank will be set in motion. The water will doubtless soon be drained and drifting resumed.

HALE & NORCROSS are cross-cutting on their sixth level, 50 feet north of their shaft, also at a point 65 feet further north. Both cuts are in the ore vein, and neither has yet reached the west wall. The ore in both is very rich.

YELLOW JACKET.—The connection between the old and new works was completed Wednesday. To-morrow they will hoist from the south shaft 200 tons, and expect to continue to hoist that amount daily. About 90 tons per day will be taken from the north shaft, and that amount will be shipped on Tuesday next and daily thereafter by railroad to the mill on Carson river.

OCCIDENTAL.—This mine is looking fine. The body of ore in the north end continues to improve. The usual amount of ore is being taken out for milling.

SEGREGATED BELCHER.—Good bodies of ore are being found on the 400 and 500-foot levels. A winze is being sunk on the 230-foot level.

IMPERIAL-EMPIRE.—Drifting is going on from the 1,000-ft. level. They are still sinking upon their main shaft, which is down 80 feet below the 1,100-foot level.

VIRGINIA CONSOLIDATED.—The shaft is down 410 feet. The rock is becoming softer. The water gives but little trouble.

SUTRO TUNNEL.—The small tunnel, or heading, six feet square, was yesterday in 131 feet, and the main tunnel 43 feet, substantially timbered as work advances.

TWIN.—The mine is yielding 15 tons of ore per day, which pays from $25 to $30 per ton, nearly all gold. A good body of ore has been developed on the 400-foot level.

CALEDONIA.—The new shaft is down 100 feet, is timbered, and a drift has been started for the purpose of opening the first level. The railroad runs within a few rods of the shaft.

MONTE-CHRISTO.—This mine has been reopened, and ore is being crushed from it at Adam's 5-stamp water mill on Six-mile Cañon.

KENTUCK.—The company are taking out 150 tons of ore per day from the 700, the 800 and the 900-foot levels, and from the old west ledge.

CROWN POINT.—The east drift from the 1,100-foot level is in 400 feet, and is in a hard black porphyry.

OVERMAN.—The company are taking out 140 tons per day of good milling ore, with good prospects ahead.

BELCHER.—We understand that pay ore is being hoisted from this mine. Drifting for new deposits is still going on.

SAVAGE.—About the usual amount per day is being taken out. Drifting still going on.

LADY BRYAN.—The mine is looking well, and the mill is kept in constant operation upon fine ore.

SIERRA NEVADA.—The surface has been extensively drifted upon and proves to be immense.

WORK TO BE RESUMED.—We are informed that work is to be resumed on the old ground, high up on the mountain west of the city, known as La Miner de L'Alto.

SIERRA NEVADA.—Gold Hill *News*, 13th: The rich vein of white ore ten feet wide, has been drifted out 65 feet. Water was encountered night before last which may perhaps give trouble. The mill is constantly at work.

WHITE PINE.

WEEKLY MINING REVIEW.—*Empire*, 14th: "We have no important changes to note in the condition of our mines. All of them continue to yield well, and the supply of ore at the mills has steadily increased. With another month's fair weather, most of the mills will be stocked with an abundance of ore to keep them in constant operation, even though we should be visited with protracted storms during the winter. One or two sales have been consummated at the East during the week, and negotiations for several others are pending. The feeling in White Pine stocks in all quarters appears more favorable than for months past."

The *News* says: "No better inducement has ever occurred for investment in our mines than this winter offers. Men who are unable, financially, to open mines, are willing to sell at reasonable figures, and capital, directed by intelligent minds, is taking advantage of circumstances."

QUARTERLY RETURNS TO SEPT 30.—*Empire* gives a list of mines which have bad ore milled during the quarter, with the amount and value of each. The totals are: Tons, 10,323; value, $605,192.

BULLION FOR THE WEEK.—*Empire* of 19th says: Several circumstances have conspired to reduce our bullion shipments for the week. The Nevada mill (McCone & Dunn's) has been out of service pending the change from dry to wet crushing, and the bullion robbery at the Stanford mill has prevented returns from that quarter. A larger amount of silver than usual is also lying in pulp. Hence our exports of bullion for the week aggregate only $46,825.58. The *News* of 12th makes it $32,632.

MILLS AND FURNACES IN EMPIRE.—The capacity of the Smelting Works at Shermantown is to be increased at an early day. ....Hall's new furnace will fire up next week....Thirty thousand pounds of amalgamating machinery, for the Stanford mill, is en route from Elko....Mr. Brown, who left six weeks since for Chicago to procure a mill, informed us yesterday that it would be ready to put in place by the 1st of January....The Vreeland & Bartlett mill, at Swansea, will be ready for work in a few days. It will have ten stamps of 650 pounds each, with six Wheeler pans and setters. A Blake's breaker is to be added, and two more pans....*News:* We visited the Freiberg Smelting Works yesterday. We found 238 bars of bullion on hand—the result of six days' run. The bars average 55 pounds each, and the assay value is $100 the ton. The ore is chiefly from the Bismuth mine. It is carbonate, very soft, and easily smelted. The supply seems to be unlimited. The works and mines are owned by Mr. Osborn, of Treasure City.

ITEMS.—*News:* Consolidated Chloride has housed the shafts preparatory for winter. Average daily yield of ore 59 tons. ...Constitution has again started up.... El Dorado (Chloride Flat) is running 10 hand-drills (with rifle powder) in the north ore chamber, 45-foot level, which tear down about 25 tons of ore per day ...Pogonip & Othello 35-foot level has moved steadily through ore 40 feet from the Center shaft, and the ore now increases in quantity....Tom Paine shows an immense amount of good ore, and is probably the nearest approach to a true fissure vein of any yet developed....Treasure Hill Mill & Mining Company is sending 44 tons to mill daily. A large body of very rich ore is being broken into east of the Posthole ... Domingo shows a large body of fine ore, that will work from $100 to $200.... The Truckee mine on Blue Hill had 15 tons worked that yielded $136. They have exposed an immense body of fine ore, which will work from $300 to $400. Some of the ore is exceedingly rich, being filled with chloride and chunks of horn silver ....*Empire*, 9th: About 3 o'clock Sunday morning the Stanford mill was robbed of 2,300 ounces of crude bullion, valued at $3,000. It was taken from a chest in the retort room, at the rear of the building. The same of the next day says the bullion was all recovered through the confession of one of the parties concerned....The tax on the proceeds of the mines of White Pine, for the quarter ending September 30, amounts to $13,917.81.....The Golden mine recently purchased by Eastern capitalists, was paid for a few days ago, and work on it will be started up on Monday. ....The Blackfoot mine, Blue Hill, has been sold to R. M. Cole, of Chicago, for $75,000. The vein is between six and seven feet wide, with regularly defined walls. The ore is rich in chloride and horn silver. Developments have been made to a depth of 60 feet.

New Mexico.

MINING ITEMS.—Elizabethtown *Telegraph*, Nov. 6th: The Aztec mill has turned out $2,000 in the last two days....The Central Co., on Moreno creek, are doing well.... The Montezuma mill, 30 stamps, commenced its run three days since, and is doing as well as even the Aztec. These two mills are chiefly owned by Mr. Maxwell, as are also the lodes....The Ayroa Honda quartz mill, 20 stamps, run by a double turbine wheel, commenced running four weeks since, on 30 tons of ore. The result was very small. There has been something wrong in the management. The rock contains visible free gold.

Oregon.

NUGGET.—*Sentinel*, Nov. 6th: We learn that a Mr. Turnbull took out of a claim on Althouse creek, a few days since, a nugget valued at $107. The mining prospects at that place are quite flattering, and the price of claims has gone up. The miners are working back into the bills.

Wyoming.

SWEETWATER.—A Mr. Cramer informed the Omaha *Republican*, of November 5, that Robert's mill commenced running the previous week, and 200 tons of ore were expected to be crushed in one run. The mills are being run day and night, and will continue all winter.

STREET GAS-LIGHTS MANAGED BY ELECTRICITY.—Gardner's patent apparatus is upon this plan: At each station-house is a key-board, and in connection with each key is an indicator, which corresponds with the indicators of electro-magnetic stop-cocks, placed in each lamp-post. When the operator wishes to light any street or district he presses the key, which moves the indicator in the office; at the same moment all the stop-cocks in that district or street move according to the indicator at the office. This apparatus has been placed in the U. S. Capitol at Washington, lighting over 3,000 gas-burners. The dome, rotunda, Hall of Representatives and other portions of the Capitol have been successfully lighted for over four years by this apparatus; also, A. T. Stewart's new store, where over 2,500 gas-burners are lighted; also, his new residence, Fifth avenue, and several other places of note.—*Artisan.*

GREAT STORMS.—The great storms of the past far exceed anything heard of within the present century. Probably the most destructive, of which we have any record, occurred in England, November 26 and 27, 1703; which caused the death by drowning of about 8,000 people on the rivers and coasts of that country. Twelve men-of-war were lost, besides an innumerable number of smaller vessels; 1,700 trees were torn up by the roots in the single county of Kent. It was during this gale that the Eddystone lighthouse was carried away with its unfortunate and confiding architect.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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San Francisco:
Saturday Morning, Nov. 20, 1869.

Notices to Correspondents.

J. P., Railroad Flat, Calaveras County.—If your ore in Kern county be antimony, it is the sulphuret of antimony, which is so easily fusible as to melt in the flame of a candle. The color should be lead gray, except where tarnished blackish. Anything melting would in one sense "tin" the shovel. But it is not tin, for that on the shovel would be infusible, or, mixed with charcoal, reducible only with great difficulty.

"W. H. M.," from Placer county, will appear next week.

Representative Visitors.—Interior items state that P. Denny, Edward W. Kinsley and Henry W. French, Committee of the Board of Trade of Boston, escorted Charles Wolcott Brooks, representing the San Francisco merchants, have been making the tour of the entire State of California, inspecting the mines, visiting the principal agricultural sections, and in every possible manner investigating the fountains of our mineral and cereal wealth, and collecting, for the information of those they represent, full and reliable statistics respecting the present condition and future prospects of this State. Also, that the President of an English miners' society, representing 40,000 miners, "is now or has been" in this State with a view to collecting facts and affording facilities to members of his society for systematic emigration to the mines of the west.

Singular—if True.—A correspondent of the *Scientific American* says for two summers, since railroad work has been in progress on the Plains, rain has fallen freely during the summer, for some 25 miles on either side of the track; while outside of that strip of 50 miles the ground has remained during the season as dry and parched as ever. If this statement is reliable, it furnishes the most striking example yet noticed of the effect of civilization upon climatic changes.

A Fall.—George Jeffreys, a miner in the Hale & Norcross, on the 11th inst. fell with the cage 230 feet, from the third to the fifth level, without breaking a bone.

Hayden's Geological Surveys of the Rocky Mountains.

Probably as early as December of the present year, the results of Hayden's surveys on the eastern slopes of the Rocky Mountains will be published at the Government Printing Office, Washington, in the style and form of the documents of the Interior Department. With the maps, geological as well as topographical, and the geological sections, of which Hayden has made great numbers through the Rocky Mountains, and one across the entire continent, there will be presented for the general information all the striking physical features of the heart of our continent. This section across the continent, if it appears before the one made by the King survey, will be the first complete representation of the rocks from ocean to ocean that is given to the world, excepting those of Marcou and Hitchcock, which were mere sketches.

Hayden's particular work is specially calculated to throw light upon the extent, age, and mineral character, of our western coal formations. The merging of the Cretaceous into the Tertiary on the slopes of the Rocky Mountains is, precisely as we find to be the fact west of the Sierra Nevada, so gradual as to make any line of separation indefinable. Mr. Hayden, on the one hand, considers all the coal in the Rocky Mountains, and even westwardly to the Pacific Ocean as Tertiary, while Newberry and Le Conte say it is Cretaceous; the Diablo region being, according to Whitney, in transition strata between the Tertiary and Cretaceous formations. In order to make some demarcation between the distinctly Cretacous and the distinctly Tertiary, Hayden adopts the plan of constructing a formation of transition strata, into which the troublesome fossils that make such doubts, are referred. Some notes of interest on these coal formations along the backbone of the continent, are given in another column, by Persifor Frazer, one of the members of Hayden's party, who is further pursuing the subject of coal on Union Pacific Railroad account, at Laramie.

The Rocky Mountain Geological Survey embraces not coal merely, but everything belonging to the subject; the party under Hayden (consisting of thirteen persons) having been subdivided into three departments, whose reports, to correspond, will be as follows: On general Structural Geology, ages, formations, coal, etc., by Hayden, there will appear between 300 and 400 foolscap pages; on Mining and Minerals, by Mr. Frazer, about 78 pages; on Zoölogy and Botany, by Mr. Thomas, 50 pages. The leading object of the survey was to discover and point out the resources of the country, especially the agricultural, on which subject Mr. Thomas' report will contain an account of all the lands capable of cultivation or adapted to grazing, including a complete description of the Parks,—the San Luis, South and Middle Parks.

The scope of country was, in the main, from Cheyenne to Santa Fé, going south along the eastern flank; and returning on a meridian 150 miles farther west, within the Rocky Mountain range, and through the Parks; coming out at Puntia Pass, thence through the San Luis, and South Parks to the Salt Works, to Fair Play, Middle Park, and so on to Denver. The work done was necessarily little more than a reconnoisance,—a fixing of geological landmarks, similar to the fixing of points in a triangulation survey.

The maps, drawings and geological sections, were made by Mr. Elliott, a young San Francisco artist, formerly a telegraphic operator in this city, who has developed a special talent for work of the kind. He has made about 450 drawings, which are exquisite, not as mere fancy sketches of scenery, but works of a geological value.

The geological formations on the eastern flank of the Rocky Mountains are as regular as they can be. The Tertiary forms a kind of hog's back, or outer rim, at the eastern foot; then there are exposed, going towards the mountains, in the cuts made by rivers, next in order, the Jurassic, and the Triassic, which latter always abuts immediately upon the granite and gneiss of the Rocky Mountains. A ride of about ten miles from the Tertiary into the granite, was all that was necessary by Hayden and Elliott, to make most of these sections of the formations on the eastern slope as far down as Santa Fé, as they will appear in the report.

Stetefeldt's Roasting at Reno.

Sixty tons of ore are reported to have been roasted and chloridized with perfect success—up to Nov. 9th, and since then how much more we are not advised—in the new furnace of Mr. Stetefeldt now in operation in the English Company's reduction works at Reno. This furnace was fully described in the Austin *Reveille* and in the Mining and Scientific Press a year or more ago, when the principle was first tested in Eastern Nevada on a working scale, with favorable results. The furnace is a combination of the idea of the Gerstenhoefer with chloridxiation. Practically, Gerstenhoefer's operation is nothing more nor less than the dropping of sulphuretted ores down a chimney. By the time that the sulphurets reach the bottom, they are roasted very nearly as effectually as in a reverberatory furnace after eight hours of exposure. This may seem incredible, but is true—a fact well established by years of successful practice, at Freiberg, at Mansfeld, and at Swansea, and a dozen other places in Europe and in South America. The furnace is extensively in use as a means of manufacturing sulphuric acid cheaply, by way of by-product; and for that purpose it has completely swept the field.

Mr. Stetefeldt added salt to the ore; altered the furnace somewhat to adapt it to the manipulation of the pasty and volatile chlorides thereby produced, and that is all. Precisely what ores are worked with success, is a matter of vital moment; but there can be little doubt of any of the simple or compound sulphurets of the important metals, excepting, perhaps, that of lead. The cost of roasting must fall, then—if the furnace *continues* to be a success—from $16 or $20 to about $6 per ton, or less. This should enable entire districts producing roasting ores, worth only $30 per ton, to be worked to a profit.

The Gerstenhoefer, or the Stetefeldt furnace either, will roast large quantities in a day. The costs for a week's work are estimated as follows by the *Reveille*:

Wood, 18 cords, at $10 per cord	$180 00
Salt, at $45 per ton, say	100 00
Labor, three men, each $4 per day	72 00
	$352 00

The succeeding amalgamation, according to a telegram from Mr. Stetefeldt himself to Mr. Burns, given in the *Reveille*, is 90 per cent. of the assay.

Sale of Ores.—For the information of miners in the interior and in answer to frequent inquiries, we learn that all ores assaying $150, and upwards per ton can be disposed of in this city, or shipped to Europe on account with fair profits. For further particulars our readers are referred to Rogers, Meyer & Co., and others who make cash advances on ores, to Mr. W. T. Atwood, purchaser of copper ores assaying as low as 10 per cent., or to Mr. S. W. Howland, ore sampler,—all of this city.

A box containing a variety of apples (choice enough for the best of New England thanksgivings) reached this office Wednesday, from San José. They come without the name of the sender—express paid.

Chemical Manufacturing and Chemistry as a Business.

In a new country like the vast domain of the Pacific slope, whose resources are not half explored, and where new things of great commercial value besides gold and silver are constantly being discovered, a chemical laboratory can be the means of grounding many a new industry upon the most favorable footing, as compared with like manufactories in other parts of the world. Chemistry is almost as much the basis in fact of general manufacturing, as assaying is of mining. Dr. Veatch's discovery of borax at Borax Lake, and the utilization of so many of our manganese deposits, were suggestions of the laboratory. We know from like tests that we have inexhaustible deposits of very pure carbonates of magnesia, soda, and potash, within reach of communications. We know of deposits of nitrates, the most valuable of the natural salts of the alkalies, but not in sufficient quantity, nor permeating the soil to a high percentage as at Iquique, in Chili, the nitre mine of the world. Yet we do not know, for people do not always understand to what good uses a chemical analysis can be put; and we *may* have as extensive nitrate deposits at Mono Lake, as there are in Chili, or as rich phosphates at our door as those that have recently made such handsome fortunes in South Carolina.

Chemical manufacturing under our peculiar conditions touching raw products and local markets, is an established business in our midst, followed to a considerable range of production, but in a general way by only one establishment,—the Pacific Chemical Works of Messrs. Falkenau & Hanks. A visit to their new location at No. 215 First street, adjoining Selby's Shot and Lead Pipe Works, is full of suggestions of new and highly important though yet undeveloped resources. Our eye falls first upon a row of half a dozen specimens of coal, from different parts of Eastern Nevada, and we are astonished at the superior appearance of one of these samples from near Elko, which the assayer informs us has been determined to be in every respect a first-class article. The conclusion is that Nevada has all the coal she wants, already on the other side of the Sierra Nevada.

The pharmaceutical market and local demands for fine special chemicals, such as nitrate of silver, are supplied in many articles to advantage by local manufacture. This kind of work merits every encouragement, since it builds up industries doubly, by keeping at the same time in our midst for expenditure in other industries, the money that would otherwise be carried out of the country by the importers. There are manufactured here, besides, cyanide of potassium, acids of various kinds, aqua-ammonia, spirits of nitre, and chemicals of nearly all kinds, the display of which in the salesroom is creditable to the coast. The particular attention given to the analysis of ores, minerals, metallurgical products, mineral waters, soils, commercial articles, etc., is fully evidenced in the working rooms and laboratory occupying the rear of the grounds and basement. On account of the necessarily close connection of this branch of the business with the moving public, the former fine location of the works on 16th street, near the Mission, being disadvantageous to the patrons of the firm on account of the distance "out of town," were abandoned a few months ago, and the present excellent location and favorable grounds for the business, fitted up with all the conveniences and facilities of the former place. There is steam led to all parts of the works for drying, digesting, distilling, etc.; a large Bunsen burner, and another burner on the principle of the Davy safety lamp; a very ingenious water blow-pipe for glass melting, etc.; drying furnaces, muffles, amalgamating pans; and a hundred other contrivances too numerous to mention or to describe, fill the works, and add to the substantial usefulness of an establishment of the kind to the Pacific Coast.

New Books.

THE METALLURGY OF IRON AND STEEL, Theoretical and Practical; in all its Branches. With Special Reference to American Materials and processes. By H. S. Osborn LL.D. Prof. of Mining and Metallurgy in Lafayette College, Easton, Pa. 8 vo. pp. 972; 230 Engravings and 6 Folding Plates. Published by Henry Carey Baird, Philadelphia.

This is one of the most complete works on iron that has been published in any of the civilized languages of the "Iron Age." It takes the position in the present, certainly, as the best extant. To say this much of an American work, on a subject like that of iron making, is a striking comment upon the growth of the iron industry in America, as well as upon the enterprise and substantial character of industrial publishing, that has developed itself in so remarkable a manner in the Philadelphia publishing house of Henry C. Baird, whose catalogue of practical and scientific books actually written and printed under the auspices of the concern, constitutes a library in itself such as we scarcely dreamed that our industries were yet capable of bringing into existence.

"This work," says the author, "treats largely upon American practice, plans, and modifications, through the whole range of iron manufacture, beginning with a review of all the commercial ores used in America, and treating of American furnace-plans, methods of reduction, inventions, opinions, difficulties, and economies, from the mining of ore and the preparation of fuel, to the formation of steel in all its varieties."

It was begun with the intention of re-editing Overman's treatise on Iron, but the plan was too narrow to fit the times; and we have therefore a new standard work, to which there have contributed (besides Overman, by way of quotation), through the author, a body of our most practical men, located in works at Scranton, Pittsburg, Fort Henry, Lake Champlain, Jefferson Co., New York, etc. Prof. Osborn has very sensibly and even studiously avoided technical terms where popular ones would answer, with a view to taking the unread and the uneducated iron worker along with him into the fields of more intricate practice, so vitally governed by the principles of metallurgical science. To any metallurgist, even of the precious metals, the work must prove of interest and practical value where the method of reduction is by fire; since the principles of the blast, of mechanical preparation, of roasting, of reduction with coal, and of slagging are the same; and this is a kind of bringing home to us of the practicability of such a thing as successful smelting when the circumstances warrant, and the smelter understands himself. Smelting of iron surely pays, in the Alleghanies and their foot hills. In view of what has been tried, and said, and done on the subject of iron manufacture on the Pacific coast, of the field that is open here, and that is soon to be filled by more than the single Oregon Iron Works, this work will be welcomed by many of our readers. So extensive and entirely special, however, is it, that a brief review cannot do justice to it, nor convey even an idea of the matter of its contents.

As to method, the author gives as Part I, five chapters on the theoretical Metallurgy of Iron—the Chemistry, Ores, Special Properties of Iron, Fluxes, and Fuel; as Part II, twelve chapters on Practical Metallurgy—Roasting, Reviving or Reduction, and special manipulations, including all about the building materials, and blasts; and as Part III, four more chapters, covering the ground where iron production verges into the manufacture of malleable iron and steel.

It is wholesome, indeed, to be confronted with this evidence of the financial importance and value of mining and metallurgy in any shape, as a business, and as an industry that is at the foundation of all other manufacturing industries,—just as gold and silver mining are at the root of the world's doings and dealings in values.

This work comes opportunely for the Pacific coast. We are getting well over our dull "spell," that followed the opening of the Pacific Railroad; over our provincialisms, our unreasonableness in hoping to profit cent. per cent. or nothing, upon all ventures; our impractical habits that militate against thriftiness in business; our extravagances of generosity, that by common consent have continued to the present to make us regard the value of ten cents to be exactly equal to fifteen cents, on the "hit" theory—not a bad illustration, by the bye, of the shiftlessness of the majority of our community in regard to property. And iron manufacturing on the Pacific coast is destined to pay, as certainly as it is a fact that heavy goods cannot go to market 20,000 miles as cheaply as they can a few hundred miles.

Osborn's Metallurgy of Iron and Steel is sold by A Roman & Co., San Francisco, at $10 a copy, and is a cheap book.

DUFUR'S STATISTICS OF THE STATE OF OREGON: Its Agricultural Development, Natural and Historical Resources, together with the Physical, Geographical, Geological, and Mineral Statistics of the State. Compiled and published by order of the State Agricultural Society. By A. J. Dufur, President of the Society. Salem, Willamette Farmer Office, 1869.

We are indebted to Hon. S. E. May, Secretary of State of Oregon, for copies of this very valuable and interesting publication of 128 pages. It is a complete description of the resources and physical features of our northern neighbor, given by counties, making 21 chapters, each a detailed description of a section under peculiar conditions, and evidently written by one thoroughly conversant with his subject. In the concluding General Review there is a compact quotation, giving the substance of W. Lair Hill's prize essay on the Physical Geography of Oregon, written for the Agricultural Society; a full account of the Navigable Rivers and their features; of the Climate, Soil and Productions; Mineral Resources, Fisheries, Lumber, Harbors, Manufactures, Titles to Real Estate, Trade and Commerce; concluding with a list of Oregon newspapers, market prices, etc.

California has not received so complete a description by counties, even in Cronise's work. This is the kind of publication to induce immigration. There is only one thing wanting—a map to accompany the book—for with it almost any one would be induced to make a study of the country under the light of this additional mass of original and very readable matter.

Brick Making by Machinery.

Brick making is, notwithstanding our suspicions of earthquake shatterings, an active and profitable industry around the bay of San Francisco at the present time. As brick making by machinery may be considered a different branch of the business, producing a pressed article, which is more compact, one-third heavier, handsomer, and much more durable than the common brick, our readers who examined the two machines in the late Fair will be interested in the following figures, given to us by Mr. Rider, touching the merits and claims of his machine. The chief advantage claimed in its behalf are, that it takes the mother clay, as brought from the bed, and makes the brick directly, mixing at the same time with sand, if necessary, and delivering the article in such a shape as to be handled, directly from the belt, without requiring to be spread in the yard before being "hacked up" into heaps. In the ordinary hand method, the bricks are first laid on the ground; then "edged" or placed on edge; and after ten or twelve hours only they are piled up to dry—going from that to the kiln. One (or two?) handlings can therefore be saved. The Rider model in the Fair was one-quarter the size of a full-sized machine. Cost of the latter, including crushers, belt and everything, $2,200; weighing seven tons.

As to the relative amount of work that can be done by machinery and by hand labor in brick making: a "gang" of eight men will ordinarily make from 14,000 to 15,000 bricks in a day. With this machine twelve men will make 35,000 and *hack* them; or about a third more in proportion, with the hacking thrown in. How much the extra results will do towards paying for the investment in the machine, and for the steam engine with its running expenses besides, is left for the brick-maker to calculate.

WORK on the new Mint in this city is progressing rapidly; 150 men are employed. The work is as yet confined to the foundation walls. The outer walls are five feet thick and built of granite. The inner partition walls are generally about three feet thick. The superstructure which will rest on the walls will be a basement and two stories above.

Recent Patents.

FOUNTAIN PENCIL—J. Gardner Kenyon, Ferndale, Humboldt Co., Cal. This invention relates to an improved writing instrument which can be used as a substitute for both pen and pencil, and which can be carried about the person with all the facility of an ordinary lead pencil, and be always ready for immediate use. It consists of a tube about the size of an ordinary pencil case, or pen holder, having a small opening through the point to receive a slender stem which extends just beyond the point. A valve within the case keeps it perfectly tight when not in use. The cylinder or tube is filled with ink, and in writing the point of the projecting stem is pressed upwards by contact with the paper, thus lifting the valve and allowing the ink to flow sufficiently to write.

IMPROVEMENTS IN HAY AND GRAIN FORKS.—Walton & Brown, Stockton, Cal. (Brown assignor to Matteson & Williamson.) This invention relates to certain new and useful improvements in the construction of forks operated by horse power for the purpose of lifting hay and grain in stacking it. It consists, first, in providing a tubular head, which is plugged or filled with wood, in order to give it greater strength and lightness at the same time; secondly, in an improved manner of securing the hands or clips to which the tines are attached to the head, in order to secure stability.

UNITING ARTIFICIAL TEETH ON RUBBER BASES TO METALLIC PLATES.—Dr. E. K. Jenner, Healdsburg, Sonoma county, Cal. This invention relates to an improved construction of artificial teeth, whereby durability, strength and economy are combined with a proper degree of lightness, thus providing a very desirable and useful combination when applied to this purpose, and it consists in setting the gum work, in which the teeth are held, in a limited vulcanite or rubber base, and then by employing two thin metal plates, build upon the rubber base the plates which comes in contact with the palate of the mouth in such a manner that the two are firmly joined together so as to form one plate.

DOOR BUTT AND MARINE HINGE.—Charles H. Foster, San Francisco, Cal. The great cost of brass hinges and door butts for marine purposes, induced Mr. Foster to experiment, in order to produce a butt of equal advantages at a much less cost, which he seems to have accomplished in the present invention. The butt here claimed is simply a common iron butt galvanized so as to resist the action of the salt water, and having a brass pintle bushing in the socket which receives the pintle. The brass being virtually non-corrosive, and furnishing a bearing for the moving parts, a door butt equally free from liability to rust, as the brass butt, is the result, while its cost is but little more than the ordinary iron butt.

CARPET BEATING MACHINE.—Loran Miner, San Francisco, Cal. This invention relates to a novel machine for beating carpets, and its object is to clean the fabric by means of a series of elastic vibrating whips, which are caused to strike it rapidly as it is passed slowly before them, but are not allowed to remain in contact with it after the blow is given. It also consists in an improved arrangement of the cams and springs which lift the whips and impel them forward, so that the machine has all the efficiency of hand cleaning; and finally the whips are operated by a peculiar device so that they move from one side to the other over the surface of the carpet as it passes, and thus every portion is subjected to the beating.

DIVERTING A SUBTERRANEAN WATER COURSE.—Caldwell and others, at Hamilton, W. P., tapped the source of a spring which had been furnishing Moster & Guptel's yard or corral in that town with water, and the question came up in the District Court as to the right of the former, by a well on their own ground, to so divert water elsewhere and previously located by others. The defendants, Caldwell & Co., moved for a nonsuit, which was granted.

The Waterhouse Rotary Mechanical Power.

The following correspondence explains itself:

S. F., Nov. 3d, 1869.

To JOHN W. SUTTON, ESQ.—*Dear Sir*: Knowing that you have made the measurement of *power* a specialty for years, and are fully prepared to discuss the subject, will you be kind enough to inform me and the interested public, through the MINING AND SCIENTIFIC PRESS, of the particular merits of the Waterhouse Rotary Mechanical Power, to which was awarded the Inventor's Medal at the late Industrial Fair. By so doing, you will oblige many inquiring minds.

W. L. D.

S. F., Nov. 10th, 1869.

To W. L. D., ESQ.—*Sir*:—In reply to yours of 3d, asking for "particular merits of Mr. Waterhouse's Rotary Mechanical Power,"—without discussing the merits of the machine—I will give you a statement of a test I made of it while it was on exhibition in the Mechanics' Fair, where it was afterward awarded the Inventor's Medal. Mr. Waterhouse was explaining the machine to me in the presence of a number of others, and claimed that with it he could break an inch rope, raise 1,800 pounds, etc. I asked him at what expense of power? He did not know. I then asked him if he had ever tested it to see what the loss was, and he frankly acknowledged that he had not. I asked the privilege of making the test, and he consented, and was there during the time. The machine is made with a barrel, 2½ inches in diameter; upon one end of it is an inside gear wheel; a short shaft with an eccentric upon one end of it, that throws in and out a peculiar gear that meshes into the inside gear wheel on the barrel. The final action being the same as Watt's sun and planet motion; the short shaft making twelve revolutions to one of the barrel. Motion is given to the short shaft by a crank on the other end of it eleven inches long. A cylinder of cast iron ten inches in diameter, twelve inches long, with a hole through it 1¼ inches in diameter, weighing about 240 pounds, is suspended by a rope one-half inch in diameter, making the barrel three inches in diameter. A spring balance upon the handle of the crank showed that it required eight pounds to turn it and raise the weight, except in one place in the revolution of the crank; there it required twelve pounds. At this point the crank would stand with the weight suspended from the barrel; at all other points it would run back as soon as it was let go. The difference in the motion of the crank and the barrel (length of the levers) is within a fraction of 87 to 1. 8×87=696—240=456 pounds—the loss of power by the machine.

JOHN W. SUTTON.

FOSSIL ELK!—The skull of a fossil elk (or antelope?) found by Captain Nethertou on the Merced, recently exhibited at the Pioneer Hall, Stockton, is discussed by the imaginative editor of the *Independent*, who says: These animals doubtless existed during one of those distant epochs, described by Herbert Spencer of cycles, or periods, of 25,000 years each. The climatic changes following a known orbital motion makes an artic region a tropical one, and likewise reverse the tropics.

Weight of the head and horns 320 lbs. The animal is found associated with the mastodon, and is of post pliocene, or "recent age."

A LARGE MINING SYPHON.—Mr. G. A. Treadwell has a mining syphon at Gravel Range, Tuolumne county, 1,000 feet long and four inches in diameter, made of galvanized iron. The head of the syphon is sunk eighteen feet down a pit in a tunnel, and the descent from the highest point to the foot is forty feet, giving a difference of twenty-two feet between the levels of the two ends. The current is so strong that gravel an inch in diameter is carried out. The pipe leaks a little, so that once a day it must be filled by a force pump.

MR. GEORGE'S CONCENTRATION WORKS, in Colorado, embodying the results of this gentleman's careful study of concentration as a specialty, have been destroyed by fire, with Rider's mill; but he will "try again," being convinced that something is to be done in that line.

Correspondence from Heidelberg.

[Written for the Mining and Scientific Press.]

Crossing the Ocean in Iron.

Eds. Press:—A sea voyage to California is no new thing; and when we found ourselves on shipboard bound for Europe, the occasion had lost the solemnity it had when we contemplated it in the days of childhood. A few hours after leaving port, we were so perfectly at home that we half believed that this voyage was only a continuation of the last one we had taken. Yet there was quite a difference. We were aboard the Manhattan, of the Liverpool and Great Western Steamship Co., and were now for the first time voyaging in an iron steamer. And I think it was the unanimous expression of all the passengers that they were pleased with iron ships, if this was a fair specimen, for we certainly had as pleasant a passage as could be wished for. There was always a feeling of staunchness and solidity that took away all fear and added much to the pleasure of our voyage. One thing is quite certain, and that is, that at the present time they are in great favor on the Atlantic. I think that all the steamship lines leaving New York are composed of iron vessels.

We were so unfortunate to arrive at the mouth of the Mersey when the tide was low, and so had to wait some four or five hours for high water. This was the most unpleasant part of our voyage; and I could not help thinking it was much easier entering the Golden Gate. The more I see of other ports, the more I am convinced that we have one of the finest in the world.

It was a pleasant sail into harbor as we passed scores of East Indiamen almost home from their long voyage, and met others on their way out.

Liverpool Docks.

But the greatest sight was when we entered the city and saw its great docks filled with ships from all parts of the world. Much has been said and written about these docks, and I will only say that, much as I expected, I was not disappointed in the least. They are magnificent, and I will add, by far the best part of Liverpool—at least the best part that I saw.

The City Itself

Seemed to be a gloomy, dingy place. The houses were sooty, and the streets narrow and crooked, yet nicely cleaned. I have compared notes with many travelers since, and they all agree in saying, that more drunkards, beggars and harlots can be seen there in a short time, than in any other city in the world. After securing comfortable quarters at the Queen's Hotel, I started out to see the city. This was our first experience in an English hotel. It was quiet; ladies richly dressed were in attendance at the office and at the bar, and everything went off very pleasantly. Everything was nice and clean, and I cannot speak too highly of their fried soules and Southdown chops. Our hill was filled full of items,—room, meals, service etc.,—and handed to us on a silver plate; and then we were expected to give every one who looked at us a "tip." All Americans, I think, will agree in condemning this custom, that you must tip every one connected with the hotel. You are never certain what your expenses are till you are out of the place.

English Working People—Muspratt's College.

We made a hasty stroll through the city, and saw the working people as they were on their way to their work early in the morning, and could not help remarking the care-worn expression of those who were still young in years. We passed Dr. Sheridan Muspratt's College of Chemistry, but had not the time to stop; and soon after found ourselves near a large ship-yard.

Iron Ship Building.

This was rare good luck, for here were five iron ships, one almost finished, and the others in different stages of completion. Here in a short time we were able to see the whole process of ship building. The keel of one had just been laid, and part of the ribs were in place. Another had its frame nearly complete, and the builders were busy putting on the iron plates. There were a great many boys here at work, and they seemed to do good service. The frame and plates were put together with red-hot bolts, and there was the most incessant clangor, as the workmen were riveting them. Time of course will tell how valuable the iron ships are; but certainly the impression they made upon a stranger was very favorable. And here we were obliged to confess that the English had the start of us Americans. It would seem that before long Americans would take the matter in hand, with their usual energy, and distinguish themselves in making iron ships, as they have in making ships of war. On my way back to the hotel, I saw the nearest approach to a horse railroad that I have seen in Europe. It was a large omnibus with small wheels running on a track, yet differing very much from our horse cars.

W. B. R.

Heidelberg, Germany, Oct. 17, '69.

A Royal Sugar Maker.—The King of Denmark is largely engaged in beet sugar manufacture. His annual profits from this source are set down at $50,000.

Railroad Lands.—The Nevada *Gazette* says that the C. P. R. R. Co. is selling its agricultural land for $2.50 per acre, and its timber land at $5.

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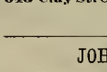

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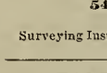

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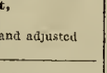

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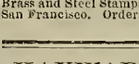

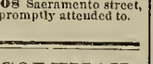

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HEAVY.—The heaviest hammer in the world has recently been manufactured by an English firm for the Russian Government. The hammer, anvil block and all weigh one thousand tons—the hammer alone forty-two tons. It is to be used in forging cannon.

The largest hotel in the world is now being built for the Leland Bros., at Saratoga, N. Y. It will have a frontage of 1,050 feet, and will be five stories high; built of brick.

The largest iron works in this country are the Cambria Works at Johnstown, Pa. They cover five acres of ground and employ 3,000 hands. Their manufacture is railroad iron, of which 82,000 tons will be turned out this year.

The heaviest roof in California is that which covers the mission building at San Juan. It is covered with tiles, weighing about 150 tons, placed upon a frame-work weighing 30 tons more. The walls of the building are of adobé.

PROF. WARD'S CABINET BURNED.—The splendid collection of fossils and casts which has been collected with so much labor by Professor Ward, has been nearly destroyed by a recent fire. This cabinet is the result of many years of labor in all parts of the world. In making his collections, he has crossed the Atlantic eight times, and overland to California six times. The loss to science can scarcely be estimated. The cabinet was valued, pecuniarily, at $68,000, and insured for $35,500. The articles saved are supposed to be worth about $15,000. The Professor thinks the fire was caused by a spark from a candle, which probably lodged in some tow, where it smouldered, unobserved, until it broke out in such a manner that it could not be subdued.

COÖPERATIVE IRON WORKS.—It is said that several machinists have recently left this city for the East with the view of securing capital and men to start extensive iron works in this city next spring. It is further reported that an association has already been founded here as a nucleus of the movement. The plan embraces grocery and clothing accommodations, as well as union for soliciting and executing orders for work and dividing fairly the profits of their joint labor. Coöperation and full hours of labor are the surest means to retain, on this coast, that industry that properly belongs here. Short hours and uninterested labor cannot compete with the full hours and cheap labor of the Atlantic and Mississippi States.

THE OCEAN TELEGRAPH.—It is said that one of the wires of the old Atlantic telegraph cable is so eaten by some small insect that it is becoming very slow and uncertain in its operation. If this report is correct, the fact is a most unfortunate one in its connection with ocean telegraphy.

THE LOWER COUNTRY.—A conflict of opinion seems to exist regarding the southern counties of California, and the papers of the northern and central parts of the State are filled with accounts of returning prodigals who have come back to the homes they deserted.

THE early snow in the East caught many of the farmers napping, with many a field of corn standing and many acres of roots in the ground.

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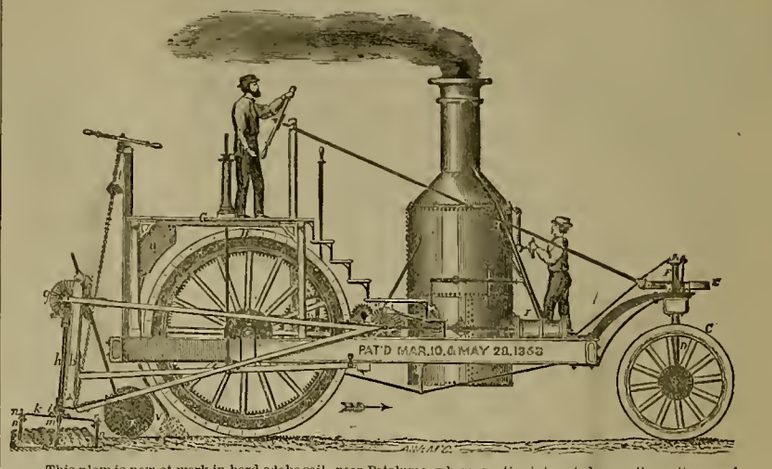
Mining and Scientific Press Office, San Francisco.

The Standish Patent California Steam Plow.



This plow is now at work in hard adobe soil, near Petaluma, where parties interested can witness its operation and judge for themselves of its practical utility. The success of this invention for plowing large fields, is established beyond a doubt. Individuals, clubs, or companies desiring a more rapid and economical means of cultivating their farms, are invited to call upon the inventor in the field, or address him by mail, Box 17, San Francisco. The inventor will negotiate the sale of patent rights (already secured) in England and France.

SPECIAL NOTICE.
TO DEALERS AND CONSUMERS
—OF THE—
H & L
AXLE GREASE.

Having received your liberal patronage and support during the last fifteen years, and desiring to further extend its consumption, and if possible meet the market of our Chicago friends, we have made a great reduction in prices, and from our long experience we will satisfy you that there is none BETTER, and through your liberal patronage that there is none CHEAPER.

HUCKS & LAMBERT,
144 Natoma Street.
Depot, 320 Jackson Street.

N. B.—We are prepared to furnish Bulk Packages to contractors on equally liberal terms.

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.

The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.

"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]

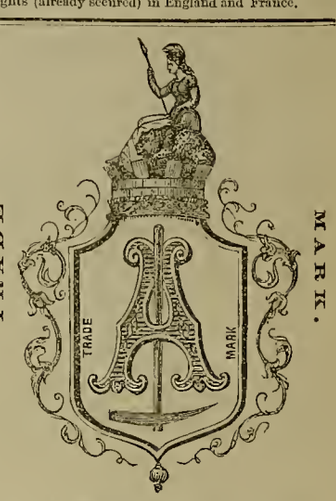
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."

Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19-6m

Blake's Patent.

THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's
Patent Steam PUMP
It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted POSITIVE under all circumstances. Send for a circular.
BERRY & PLACE, 112 and 114 California st., San Francisco.

OCCIDENTAL
Insurance Company,
OF SAN FRANCISCO.
Cash Capital, - - - - - - - $300,000
GOLD COIN.
Office S. W. corner of Montgomery and California streets.
Fire and Marine Insurance.
All Losses paid in U. S. Gold Coin.
OHR. CHRISTIANSEN, President
B. ROTHSCHILD, Secretary. 20v17-3m



New Almaden Vichy Water,
(CALIFORNIA VICHY WATER.)
FROM THE SPRINGS,
NEW ALMADEN,
Santa Clara County.
F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.
OFFICE, 506 JACKSON STREET,
GENERAL DEPOT:
Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the veinous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the physician only can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever:* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the Indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen 25v18tf

International Hotel,
JACKSON STREET,
BETWEEN MONTGOMERY AND KEARNY STS.,
SAN FRANCISCO, CAL.

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

Prices varying from $1 50 to $2 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents
21v12 F. E. WEYGANT, Proprietor.

Coal of the Rocky Mountains.

[Written for the Mining and Scientific Press.]

A few years ago it was very seriously douhted whether coal occurred west of the Mississippi river in quantities great enough to supply the future demands of the enormons immigration to the West. This has proved not to be the case. As in other industries, it was necessary first that a great and urgent need should arise before the attention of people was called to this very important question.

This need presented itself when the Pacific Railroad became an accomplished fact, and the price of wood fuel began to grow dearer as the pine forests dwindled away from the line of the road. Two years ago it was douhted whether enough coal could be supplied to meet the wants of the Paicific Railroad from mines west of Omaha; and to-day this much at least is certain, that with proper enterprise coal enough can be furnished from the mines in Colorado and Wyoming Territories to supply the whole Western United States for all time. How came it then that these coal heds lay so long unknown and neglected? This is a very hard question to answer; and without attempting to do so, let me give you a few facts in regard to this coal.

Extent and Situation.

In extent, the coal beds have more than fulfilled the most sanguine expectations of those who believed that the West would yet produce everything necessary to the development of so vast a country, from its own rich treasures. Along the eastern flank of the Rocky Mountains, where the successions of the geological formations from the granites and metamorphic rocks to the most recent alluvium are most distinctly marked, and most easily observed, there occur, for the greater part of its length, between strata of rusty or yellow tertiary (?) sandstones, veins of coal which, as far as yet ascertained, continue indefinitely North and South.

Geological Age.

That this coal is of much more modern origin than the Pennsylvania and Illinois coals, is undoubted. Firstly, the general position of the heds is between layers which are unmistakably Cretaceous or Tertiary; then the appearance of the fossils themselves, resembling much and giving the impression of now-existing plants and leaves, etc., etc.

Quality and Characteristics.

This coal shows a tendency to crumble or "slack" on exposure to air, and into rectangular prisms in quite a remarkable way. From a number of analysis which I have made of coal from different mines, the percentage of carbon is found to be as great as, or greater, than in the best coals of Pennsylvania. I have not time at present to enter into the analysis in detail, but will merely state that its porcentage of carbon varied in over twenty specimens examined, from 45 to over 72 per cent. The percentage of water was also very variable. Two objections have been urged against the use of these coals, by Western practical men, and innumerable objections have been made by Eastern coal miners. The two leading objections, are first, the tendency of the coal to crumble, thereby choking up the draft; and second, the almost invariable presence in it of sulphur, which thereby unfits it for the blacksmith's forge. In answer to the first objection it might be said that Professor Hill, of Black Hawk, Colorado, who is in charge of the largest smelting works in the Territory, avoids the difficulty by the use of the "staircase furnace" and an artificial draft. It is true that most of the coal contains from .42 to 2 per cent. sulphur, but there are heds of coal in which sulphur appears to be entirely absent; and the writer has noticed it in general use in the blacksmiths' forges from Cheyenne to San Lazaro Mountains.

Importance to the West.

The subject of these Western coals is one fraught with interest to the whole country, and especially to Nevada and the Pacific States in general, because *thus far* no first-class coal has been discovered in them. If it be true that no *valuable* coal heds exist West of Wahsatch, U. P. R. R., it is nevertheless a fact that the further West valuable coal is mined, the cheaper will he that commodity.

Of the coal resources of Wyoming and Colorado Territories, there can be no longer a shadow of a donht; and to judge by analogy, there ought to be similar coal fields of first-class quality on both sides of the Sierra Nevada. Whether such will be discovered, remains to be seen, but every lover of California's beautiful trees, as well as every capitalist, will hope for such a discovery.

Anthracite Bed.

A curious recent anthracite—(an altered Tertiary-Cretaceous coal)—has been observed in several places in the vicinity of the Rocky Mountains, where large trap dykes have made their appearance in the neighborhood of such coal heds. One very marked example is that of a coal bed, the property of the New Mexico Mining Co's grant in the San Lazaro Mountains, thirty-five miles south of Santa Fé. Along with other coal heds similar to those referred to above in this grant, there occurs a five-foot vein of coal which is hard, and more black and lustrous than these coals, besides having a conchoidal fracture, entirely unlike the parallelopipeda of the usual Tertiary coal. Two analysis of this coal, one made by a chemist connected with Dr. Le Conte's survey of the 35th parallel, and the other by myself, agree in placing the percentage of carbon very high. It is almost superfluous to add that such anthracite heds, being formed by local heat, are not to be depended upon for any great extent, as are the more ordinary recent coals. P. F.

Steering by Steam.—The St. Louis *Dispatch* gives the following from a correspondent present at the trial of a new steam steering apparatus on a lake steamer: "The experiment was such a complete and marked success, mechanically, and seems in its principle to foreshadow such immense benefits to steam navigation, that it deserves the earnest and instant attention of the public. Instead of a cumbrous wheel in the pilot-house, a lever like the starter of a locomotive stood up from the floor, which worked either way from side to side by no heavier pressure than could be given by the thumb and finger, but which made the North Star, a long, narrow river boat, almost turn on her center, and then as instantly reverse. A doubt having been expressed as to whether she could be 'held' on the same steady course for a length of time, the steersman fixed on a mill chimney two miles distant, and made for it. After getting her from the previous violent swayings into true line, he dropped the bar and let her run for it, until all on board were satisfied. Where the steam rudder is left there it stays, and no power less than that able to overcome all the steam force of the boilers can shift it till again manipulated by the lever. Numerous experiments were made in turning, backing, twisting, and all with astonishing results. The steering power was instantaneous in its action. When standing still the rudder could be put down with such force as to swing the vessel a point or two."

[From the "Mechanics' Fair Daily Press, Oct. 30.]

The Patent Office and Patent Business.

In the first number of this volume of the Daily Fair Press, we gave an illustration of the National Capitol, an imposing edifice, a personal examination of which cannot but enlarge the feeling of national pride in every true son of America who visits it.

We now give in this, our last issue, a view of the second building in importance in the United States.

The Patent Office, although a less pretentious building, is considered by many as really the best building in America, from the superiority of the granite of which it is composed, and the grandeur and perfection of its architecture.

Patent Business in the United States.

No government in the world encourages inventors more than our own, and none of the countries in the world produce half, or a quarter, of as many inventions or patents as the United States. And still the number of patents increase yearly.

UNITED STATES PATENT OFFICE, WASHINGTON, D. C.

In 1868, 20,445 applications were made, and 12,959 U. S. patents issued; 419 re-issued, and 140 extended. This amounts to twice the number issued in 1865, and 3½ times that of 1858. There has been issued this year, up to October 19th, 10,467 patents.

Patent Business of the Pacific Coast.

We judge the present rate of patents issued to Pacific Coast inventors is about 300 per annum, which is a large number in proportion to our population. Patents are beginning to pay better in the Pacific States, owing to the increase of permanent improvements and manufactures. The inventions in our comparatively new country are more bold and original, and the proportion of patents granted to the number of applications made, is far greater than in the Eastern States.

The Commissioner says: "Questions as to the peculiarity of inventions become more difficult with this increase in the number of previous devices." This is an imperative fact, and is the real cause of complaint from inventors that they cannot now, as formerly, secure valid patents without the aid of experienced agents.

Information about patenting inventions and filing caveats, can be had free at all times at the office of the Mining and Scientific Press, where full Government reports and records can be examined, besides full copies of most patents taken out by inventors on this coast. The long practice of Dewey & Co. in patent business and the publication of a mechanical journal, gives this office advantages which Pacific Coast inventors cannot obtain elsewhere. The liberality shown by this firm towards all inventors in obtaining patents and making their valuable inventions widely known through the Press—which could only be afforded by strict attention to business—has given the office a patronage not exceeded by more than two or three agencies in the whole country.

Patents in Foreign Countries

Are taken out by Americans in larger numbers now than ever before. The Pacific Coast is honored by several foreign patents nearly every month in the British Patent Commissioner's Journal. Most of these (as is the case with the United States patents for the Pacific States and Territories) are taken out through the Mining and Scientific Press Agency. Our foreign cases are made out entirely in our office, sent and applied for in the name of the inventor; which is more satisfactory to the applicant than having it patented in the name of an agent and assigned back as most other patent agencies are in the habit of doing. Our arrangements are such that foreign patents can be secured for our home inventors, from two to six months sooner than they can be secured by any other means. Our business connections extend to every country in the world in which patents are granted.

Expense of Applying for Patent.

The Government fee, on filing an application for a patent in the United States, is fifteen dollars; and if the patent is allowed, twenty dollars additional is required. If rejected, the first fee of fifteen dollars is all that is demanded.

To the foregoing official fees must be added fees for preparing the various documents and expense of drawings. Our charge for preparing the documents for a case, presenting it to the Government, and attending to all business connected with it, is $25 and upward. For cases demanding extra work and attention, only a reasonable fee in accordance with the services required, to do full justice to the case, will be charged.

Following is the list of Government fees, payable in currency:

On every caveat	$10
On every application for a patent, for seventeen years	15
On every application for a design, for 3 yrs and 6 mos	10
On every application for a design, for seven years	15
On every application for a design, for fourteen years	30
On issuing each original patent	20
On filing a disclaimer	10
On every application for a re-issue	30
On every additional patent granted on a re-issue	30
On every application for an extension	50
On the grant of every extension	50
On appeal to the Examiners-in-Chief	10
On appeal to the Commissioner from Examiners-in-chief	20
On every appeal to the Judges of Circuit Court, D. C.	25

Inventors on the Pacific Coast, located at great distance from the Patent Office, of all others, should be careful to avoid inexperienced, dishonest, or otherwise unreliable and irresponsible agents.

Inventors having models in our possession must send written orders when they desire any particular friend to see them.

Dangers of Delay.

Situated so remote from the seat of Government, delays are even more dangerous to the inventors of the Pacific coast than to applicants in the Eastern States. Valuable patents may be lost by the extra time consumed in transmitting specifications from Eastern agencies back to this coast for the signature of the inventor, or by reason of return for amendment when addressed directly by the inventor to the Government.

Our Office.

The office of the Mining and Scientific Press is located in the second story at No. 414 *Clay* street, north side, just below Sansome. Here we have spacious accommodations, with our patent rooms, editorial room, counting room, and newspaper printing office — all conveniently arranged and connected, and our facilities for dispatching business correctly and economically, better than ever before. Don't forget the number —414 Clay street, below Sansome

DEWEY & CO.,

Publishers and Patent Agents, No. 414 Clay street, below Sansome, San Francisco.

Convenient Forge.

At the Eureka Foundry, (Thompson Brothers, on Beale street,) may be seen in operatino the very convenicnt round open forge which was exhibited at the late Mechanics' Fair, and whose merits are worthy of special regard by those who have much to do in a limited space either in very largo or very small shops, as well as by manufacturers on the second and third floors of ordinary buildings. It is merely a cylindrical casting, constituting an air reservoir into which a common bellows plays, set on end, and having a depression in the end to hold the fire. The *invention* consists in a conical blast muzzle, to feed the fire. This is pierced with three holes, of variable size, the effect of which, in that arrangement, is said to be a remarkable saving of fuel— about one-third of the ordinary amount—enabling the smith, at the same time, not merely to regulate and thereby keep nuder control his firo, but to get up a heat in half the usual time. The weight is from 100 to 500 pounds.

THE MASONIC MIRROR.—No. 3 of this new monthly, for November, has been received. It contains 64 pages of fresh and interesting reading, a large portion of which is especially instructive and desirable to members of the craft. "Was it Death," in No. 2, and "Country Children," in No. 3, are real gems. Edited by W. Bishop, and published by F. R. Carrick, S. F., at $2.50 per annum. [We suggest that Mr. C. print the name of the month on the first page of the cover of each issue.]

LOOK TO YOUR EYES.—If you will see C. Muller, 205 Montgomery street, you will doubtless be able to see better. ***

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

To Advertisers.

After January 1st, 1870, the latest hour for receiving mining and other advertisements for the M. AND S. PRESS will be during Thursday evening, as our paper will be printed for the interior mails on Friday morning.

FOR COUGHS, COLDS AND THROAT DISORDERS, use "*Brown's Bronchial Troches*," having proved their efficacy by a test of many years. The Troches are highly recommended and prescribed by physicians. Those exposed to sudden changes should always be supplied with "*The Troches*," as they give prompt relief.

THE PAIN KILLER is both an internal and external remedy.

THE PAIN KILLER should be used at the first manifestation of cold or cough.

THE PAIN KILLER.—Don't fail to keep it in the house ready for use.

THE PAIN KILLER is an almost certain remedy for CHOLERA, and has, without doubt, been more successful in curing this terrible disease than any other known remedy, or even the most eminent and skillful physicians. In India, Africa and China, where this dreadful disease is ever more or less prevalent, the PAIN KILLER is considered by the natives, as well as by European residents in those climates A SURE REMEDY.

THE PAIN KILLER.—Each bottle is wrapped with full directions for its use.

THE PAIN KILLER is sold by all druggists and dealers in family medicines.

REDINGTON & CO. and HOSTETTER & SMITH, San Francisco, General Wholesale Agents. no6

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

CO-OPERATIVE UNION STORE.—This is becoming one of the most useful Institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco. 24v18-4w

PHOTOGRAPHY.—For CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

RETURNED.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

M. & S. PRESS.—The paper is a valuable one, containing notices of patents, and the latest improvements in mining and agricultural machinery. There is but little of real worth that comes to us from San Francisco, and amongst that little is the PRESS.—*Butte Record.*

New Mining Advertisements.

Allegheny Consolidated Gold Mining Company, Location of Works: Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Pompkins	9	1500	$450 00
A L Whitney	32	185	55 50
Charles Adams, Trustee	12	100	300 00
I N Thorne	13	125	37 50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 37, New Merchants' Exchange, on the fifteenth day of November, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. oc30

POSTPONEMENT.—The above sale is hereby postponed until Monday, the sixth day of December, 1869, at the same hour and place. By order of the Board of Trustees.
no20 J. M. BUFFINGTON, Secretary.

Glenwood Mill and Mining Company,—Location of Works: Greenwood, El Dorado County, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twelfth day of October, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
Baleh, S M	not issued	70	$21 00
Janeson, L	24	70	21 00
Keenan, W	not issued	70	21 00
Wells, F H	not issued	75	22 50
Wood, J H	19	140	42 00
Wood, J H	31	67	20 10
Wood, J H	not issued	105	31 50

And in accordance with law, and an order of the Board of Trustees, made on the twelfth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on Tuesday, the seventh day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco, Cal. no20

Pocahontas Gold Mining Company.—Location of Works: Mud Springs, El Dorado County, California

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of November, 1869, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 419 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twelfth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.
Office, 419 California street, San Francisco, Cal. no20

Taylor Mill and Mining Company.—Notice.— The Annual Meeting of the Stockholders of the Taylor Mill and Mining Company, for the purpose of electing five (5) Trustees to serve for the ensuing year, will be held at the office of the Company, No. 520 Montgomery street, San Francisco, on MONDAY, the thirteenth day of December, 1869, at four o'clock P. M.

SAM'L S. MURFEY, Secretary.
San Francisco, November 16th, 1869.

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	3	265	bal 78 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
S P Wells	10	1258	bal 127 75
J R H Williams	69	979	bal 92 21
F C Larsen	39	5	1 50
A T N Peterson	40	10	3 00
George Amerige	41	10	bal 1 00
W H Kehn	43	5	1 50
Otis V Sawyer	45	20	6 00
Otis V Sawyer	46	20	6 00
R O B McDonough	48	100	bal 10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	59	300	bal 63 00
J D Littlefield	61	630	bal 63 00
George H Russell	64	600	bal 133 12
S M Smith	74	200	bal 20 00
Samuel D Meyer	75	50	15 00
George B Merrill, Trustee	63	631	189 30
Otis V Sawyer	71	1200	bal 112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. RUSSELL, Secretary.
Office, No. 439 California street, San Francisco. sc25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.
oc9 GEO. H. RUSSELL, Secretary.

POSTPONEMENT.—The above sale is hereby postponed until Monday, the fifteenth day of November, 1869, at the same hour and place. By order of the Board of Trustees.
nov6 J. H. H. WILLIAMS, Secretary pro tem.

POSTPONEMENT.—The above sale is hereby postponed until Wednesday, the first day of December, 1869, at the hour of 12 o'clock M., at the auction rooms of Maurice Dore & Co., 327 Montgomery street, San Francisco.
no20 GEO. H. RUSSELL, Secretary.

Mining Notices--Continued.

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of November, A. D. 1869, an assessment of thirty cents per share was levied upon each and every share of the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No 520 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the tenth day of January, 1870, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURFEY, Secretary.
Office, 520 Montgomery street, over Salner's Bank, San Francisco, California. no20

Bucklin Silver Mining Company.—Location of Works: White Pine District, White Pine County, Nev.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the thirtieth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J W Bucklin	2	500	$25 00
J W Bucklin	3	500	25 00
J W Bucklin	4	500	25 00
J W Bucklin	41	300	15 00
O W Rogers	19	100	5 00
Joseph Lawler	35	2000	100 00
Thos H Brooks	37	100	5 00
M Emma Faber	82	100	5 00
Abram Moger	no cert. issued	1612	80 60

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 40 Merchants' Exchange, California street, San Francisco, on the thirtieth day of November, 1869, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

S. D'ELL STONE, Secretary.
Office, No. 40 Merchants' Exchange, California street, San Francisco. no13

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monuor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty (50c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner Montgomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary
Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

La Blanca Gold and Silver Mining Company.— Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of November, 1869, an assessment of one dollar ($1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 312 Front street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOSEPH OOLDMAN, Secretary.
Office, No 312 Front street, San Francisco, Cal.

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner of Montgomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Mount Tenabo Silver Mining Company.—Location of Works: Cortez District, Lander County, State of Nevada.

Notice is hereby given, that the Annual Meeting of Stockholders of the above named Company, will be held on Thursday, the 25th day of November, 1869, at 7½ o'clock P. M., at the office of the Company, No. 426 Montgomery street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.

CHAS. F. SCHULZE, Secretary pro tem.
Office, 426 Montgomery street, San Francisco, Cal.
San Francisco, November 10th, 1869. no13

North America Consolidated Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-seventh day of September, 1869, an assessment of two and one-half cents (2½c) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the first day of November, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-second day of November, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOHN ARMSTRONG, JR., Secretary.
Office, 302 Montgomery street, San Francisco. oct2

OFFICE NORTH AMERICA CONSOLIDATED MINING COMPANY.—NOTICE.—At a meeting of the Board of Trustees of the above Company, held this day, it was resolved to postpone the publication of the delinquent list until Thursday, the twenty-fifth day of November, 1869, and the time for sale of delinquent stock until Monday, December twentieth, 1869. JACOB BACON, Secretary pro tem.
San Francisco, Oct. 30th, 1869. no13

BY MAIL.—The *Mining and Scientific Press* will be sent by mail to any part of the civilized world. In case of removal subscribers have only to inform us of the post office address of the old and new location, and the paper will be sent accordingly

Silver Star Consolidated Silver Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1869, an assessment of fifteen (15) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. no13

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THOMAS MOONEY, President.
August 2, 1869. 6v19-1m

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18v19-1m

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Embracing Mortising, Sash and Moulding, Smith's Stickers, Slat and Door Tenoning, Boring, Shaping, Scroll Sawing, Planing, Rod and Dowell making and Re-sawing Machines, Wood and Engine Lathes, etc., for sale at Eastern prices, at the Machinery Depot of

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☞Agents for Blake's Patent Steam Pump, (warranted the best in the market); Davis & Furber's Woolen Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustrated Catalogues sent free,

Gold Quartz Veins of the Alleghanies.

Dr. John S. Graham, an old California miner, writing from Ringgold, Georgia, to a friend in Tuolumne Co., speaks of these as follows: "The metallic deposits along the Alleghany range of mountains are nowhere very rich, but found in sufficient quantity to raise high expectations, and by economy and perseverance might be made remunerative. There are two gold belts extending across the northen portion of Georgia, converging and coming together near the Alabama line. Northeasterly, they pass through the upper portion of South Carolina into North Carolina; thence into Virginia. I have traversed the Georgia branches throughout their whole extent, with my hammer and haversack, and know exactly where the richest deposits are located. The country has never been properly prospected, and only here and there, at long intervals, are parties at work. There are but two stamp mills on the whole route; one crushing $2 rock, and the other $25. West of the gold belt, iron, lead, zinc and small quantities of silver ore are found. The placer mines have been skimmed over, and some have been very rich, yielding 100 dwts. a day. Gold here is never named in ounces, but always pennyweights. But since the war everything is in a ruined condition, and the people are very poor, nothing being left them but their lands and a portion of their houses. Where they can raise corn enough for their bread they seem satisfied."

The Wharton Automatic Switch.

—The *U. S. Railroad Register* was recently present at an exhibition of the working of this life-saving invention, and is eloquent in its praise. We quote: "A locomotive, with tender and empty truck cars attached, was put through its paces over the switch, forward and backward, switch right and switch wrong set, up and down the main track and up the siding and back, to show the automatic working of the switch and the impossibility of accident, no matter how the switch was set. * * We could see no flaw in its principle, and no hitch in its practice; and, what was very pretty, as well as reassuring to a nervous traveler, when the switch was set wrong and the engine came down over it at a speed of say 15 miles or under, every wheel of the train had to care for itself and right the switch in its turn; but when the engine came on at the higher rate of 25 or 30 miles an hour, the first pair of wheels threw the misplaced switch into order for all the rest of the train by tossing the weights clean over the perpendicular, a feat which a slower train could not do. In fact it excited a genuine sentiment of admiration in the spectators standing on the ground when the train went by, to see how neatly the switch bar was tossed into position; how entirely useless a switch-tender's presence had become."

There are a greater number of miles of railroad in the United States than in all other parts of the world—and that without taking into account the overland road, which is the longest continued reach of railroad in the world.

Mormondom.—The Mormons have 130 cities, towns and villages, and number over 200,000 souls.

The Mint at Carson is ready and waiting for the proper officers to take possession and put it into operation.

I. O. O. F.

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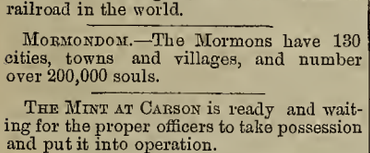

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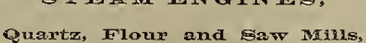

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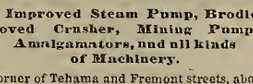

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LEWIS R. MEAD.....Secretary,
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Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Patton's, and Belding's Amalgamating Pans and Settlers; Hendy's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Dendy, Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.

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SCOTT & ECKART CUT-OFF ENGINE.

As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Off at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:

"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 30-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 40 or 50 horse power with ease and economy. Awarded silver medal. Wm. Barnett, Monl'y Fletcher, John Myers."

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Flue or Tubular Boilers, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

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Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

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To be sold positively within the next three months—the MINES, ENGINE, MILL, and entire Machinery of the TEMPLAR NO. 2 Quartz Mining Company, located at Indiana Ranch, Yuba County, consisting of—

One Steam Engine, 60-horse power, made by Burden, Brooklyn, New York.

Two large Boilers, in complete order.

One Eight-Stamp Battery.

One Chile Mill.

One Cornish Lift-Pump, 6 inches, of superior make and finish.

280 feet of 5-inch Iron Suction Pipe.

One large Water Tank.

And also all of the necessary machinery, with Belting, Feed Pumps, Hose, Turn Tables, Cars, Ropes, Track Iron, Pitmess, Plates, with Blacksmith Shop and all Tools and requisite implements to be found in a large and first class quartz mill.

The Company having ceased operations intend selling off their effects as speedily as possible.

For Particulars as to price, etc., address, by letter or otherwise, L. W. CAMPER, at Indiana Ranch; GEORGE B. HORNISH, Marysville; or R. W. HASKELL, Pacific Fruit Market, San Francisco 24v18-1m

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VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has everrequired repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

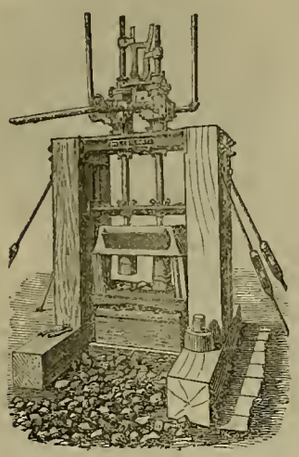
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Settlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Millmen are invited to examine these pans and settlers for themselves, at the office, **229** Fremont street,

1v1 San Francisco.

THE WILSON
Patent Steam Stamp Mill.



This extraordinary Mill, now so justly popular in the East, is now offered to the miners of the Pacific Coast. Having been in operation now for about eighteen months, the Company feel confident that the

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For Durability, Efficiency,

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HAS NO EQUAL.

The Wilson Steam Stamp Mill is the only Steam Mill that has had the severe ordeal of practical working, and proved itself eminently successful. It is now in operation in several of the Eastern States and Territories, and gaining an envious popularity. The whole machine is so simple as to be readily understood by the most ordinary minds. In fact, its simplicity is its durability. The expense of crushing rock or cement with this Mill is less than one-half the expense of any other Stamp Mill, and less than one-half the cost. For further particulars inquire of

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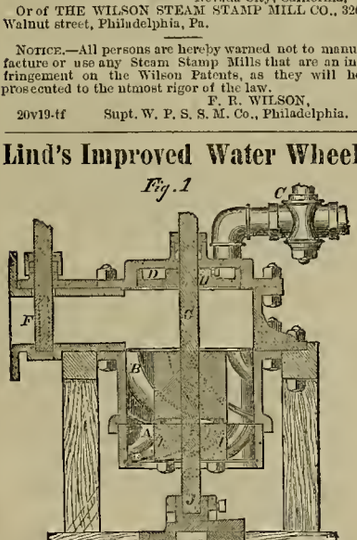
NOTICE.—All persons are hereby warned not to manufacture or use any Steam Stamp Mills that are an infringement on the Wilson Patents, as they will be prosecuted to the utmost rigor of the law.

F. R. WILSON,
20v19-tf Supt. W. P. S. S. M. Co., Philadelphia.

Lind's Improved Water Wheel

Fig. 1



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Pacific Iron Works, San Francisco.
Refer to John Sime and J. J. Haley. 19v19

THE *Mining and Scientific Press* should have an extensive circulation in every mining community on the Coast.—*Placer Herald, Dec.* 19.

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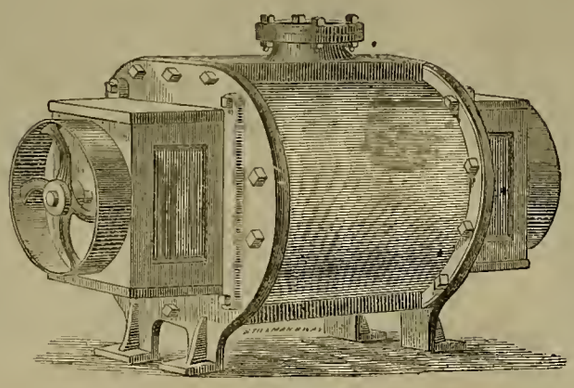

Patented Nov. 1st, 1864; July 4, 1865; and Oct. 6, 1866.

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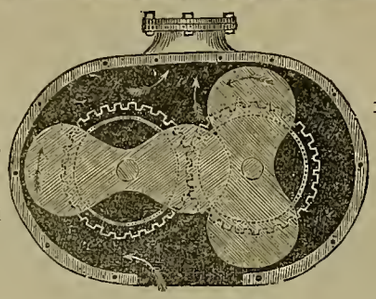

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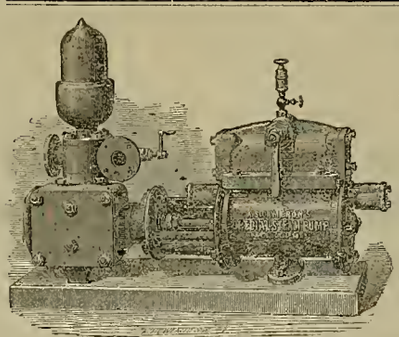

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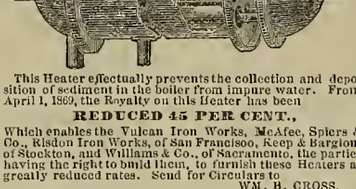
Heater & Sediment Collector



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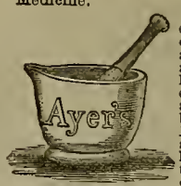

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An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.

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[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For the Week Ending November 9th.

Ditching Machine.—Henry Benett, Linden, San Joaquin County, Cal.

Water Wheel.—J. G. Fredenburr and William V. Andrews, New Castle, Placer County, Cal.

Fountain Pencil.—J. Gardner Kenyon, Ferndale, Humboldt County, Cal.

Rotary Steam Valve.—H. Lombard, San Francisco.

Endless Chain Water Wheel.—H. S. Stewart, Yreka, Siskiyou County, Cal.

Excavator.—Alfred Eddy Pierce, Gilroy, Santa Clara County, Cal.

A 40-Ton Boiler for the government steamer Newbern, plying between this city and Alaska, has been constructed at the ironworks on Howard street. It rests on the sidewalk, where the workmen are applying the finishing touches.

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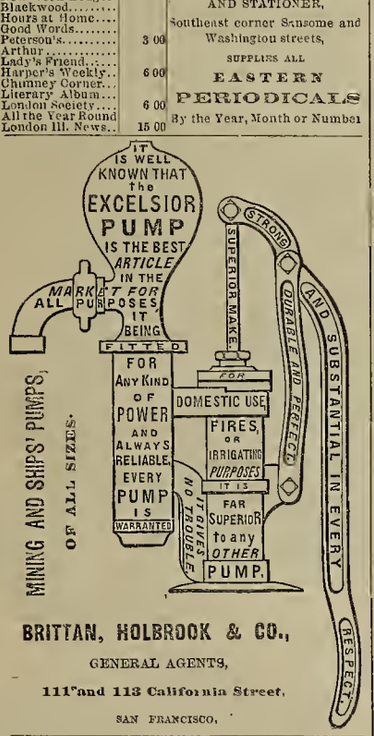
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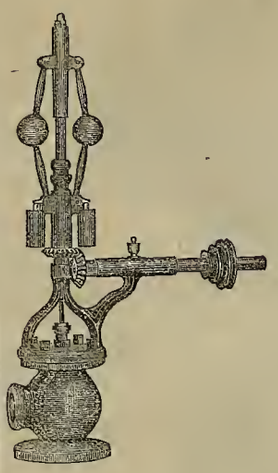

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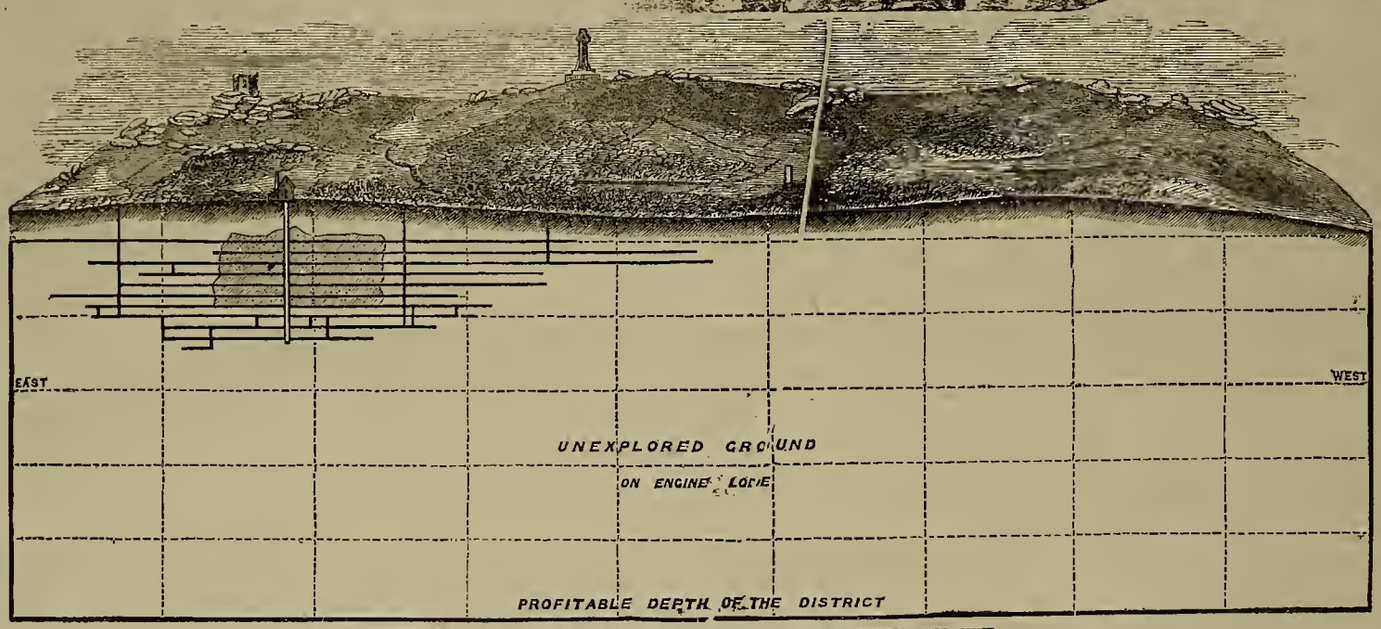
BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, NOVEMBER 27, 1869. VOLUME XIX. Number 22.

A Visit to the Carn Brea, and Some Notes about Cornish Mining.

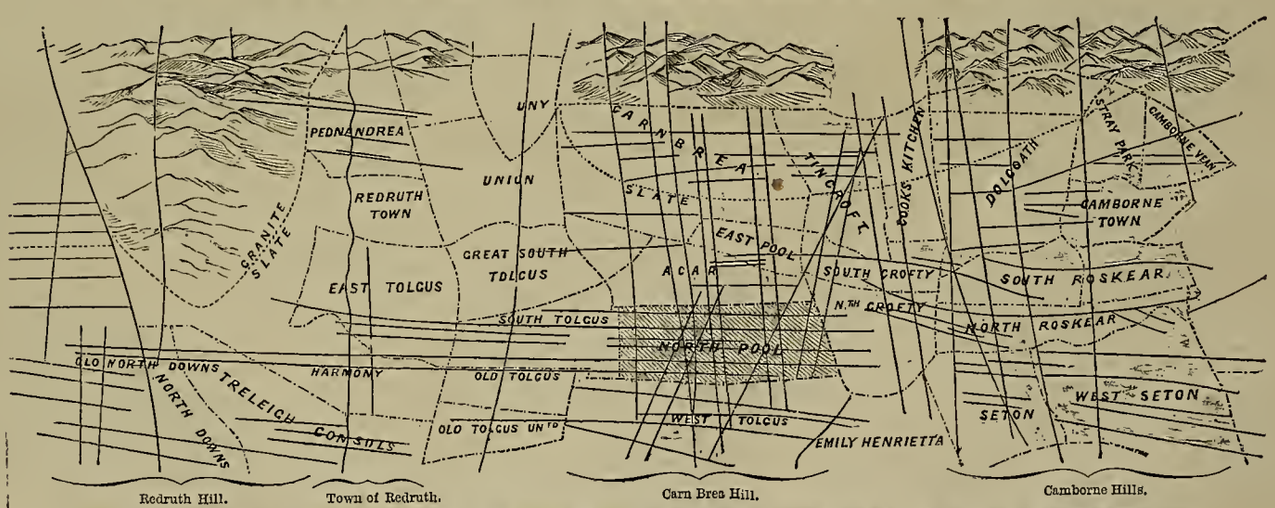
[Written for the Mining and Scientific Press.]

By one of those peculiar happenings, which we fancy to call providential, the writer, a miner of California by choice and profession, found himself, on a stormy looking morning, Oct. 16th, 1867, on board of a disabled vessel, being towed past the Castle of Pendennis, into the cheery, welcome harbor of ancient Falmouth on the Cornish coast. Taking advantage of the shore tug to visit this famous mining region, while the vessel was proceeding to Southampton docks for repairs, I am now enabled, with much pleasure to myself, to place together a few memoranda of two days' ramblings, that were packed with incident, affording me reminiscences of an interesting country and a genial people, such as I think it is seldom the lot of a traveler to know, or to appreciate. There were jaundiced sailors on the stone quays—one poor Swede especially, a convalescent—who told me a vivid story of a wreck in which he was saved off those headlands, a misfortune from which we had ourselves barely escaped, for a furious storm was brewing and that same night broke over Cornwall, which lasted during the whole of my stay, and gave a coloring, or rather a *chiaro scuro* of contrast, to the kindly welcome of the people within the taverns or old country "inns" that I happened into, but more especially from the mining captains I met, who accompanied me in the rain over their concentration works, or through their mines and smelting works, and with whom I did not escape the experience of some wholesome English hospitality, accompanied by genuine roast beef, and long clay pipes and ale.



VIEW OF CARN BREA HILL FROM THE NORTH, AND SECTION OF NORTH POOL MINE.

[Scale, 1½ Miles Long (Horizontal Subdivisions, 100 Fathoms; Vertical, 60 Fathoms). Sketched by J. S. Phillips, Former Superintendent.]



ROUND PLAN OF VEINS AND CROSS COURSES OF THE RICH CORNISH MINING DISTRICT ON THE NORTH SIDE OF CARN BREA HILL, LOOKING SOUTHWARDLY.

[Scale, 4 Miles Long by 1½ Miles Wide. Plotted by J. S. Phillips, M. E.]

Mining as a New Business, and as a Bad Business.

By the light of the moon I had been able to distinguish the Scilly Islands, and the hard-ribbed Lands End and the Lizards. These were the Cassiterides of which Homer wrote, and to which the Phœnicians traded; whence ancient Egypt obtained its tin, to make bronze ornaments and axes. Away back to the "age of bronze" that preceded the iron age, this leads us; and almost to the stone age, or at least 500 years, perhaps 800, before Christ. It was the shipping of ores and metals that made the Phœnicians rich and great, the first of commercial nations; so that mining in Cornwall may be said to have originated even commerce, for it tempted those people and induced them to learn to navigate by the stars. Bronze of the ancients is hard, an alloy of one tin to nine copper; it was the

only material then known that would do to make sharp cutting weapons. Egypt became civilized early, and Rome conquered the world because they went into these bad speculations of metallurgy and mining. It would appear, likewise, that the American Great West might even profit by remembering that, after all, we are not exactly the first and the only miners who thoroughly understand what we are about, or know how to get rich in the business of mining and manipulating stocks, ores and tailings. The Phœnicians and Romans surely must have had their Stock Boards, and their "Bank Crowd," too; or how could they ever have profited so much out of mining? On general principles it is conceded, to the *Bulletin* and the *Union* however, that cigar selling is a better business than mining. So is newspaper publishing, and haberdashery, for our wisest editors have tried both, and through them the public comprehend the business full well!

Flight to the Principal Mining District.

Where did the Ancients obtain their tin? From brooks all over Cornwall, as our gold is taken out of the California river beds. By the aid of steam and the smoothest of railroads that I have ever ridden upon, and a two shilling guide to Cornwall, it was easy enough to fly to the very spot—in my limited time, and with the greatest precision, while the storm was breaking over those sea-girt hills—where the earth has yielded most richly in tin and copper; up the river Fal, and via Truro and St. Day to Redruth.

And here, accompanied by a jolly and most excellent miner of the legitimate school, Capt. Thom. Miners, of the Carn Brea mine, we mount next morning the Carn Brea hill itself. Were I to dwell upon the incidents concluding the first day, and so continue, my notes would fill a volume; touching my visit to the surface and concentration works around Redruth, chiefly the Wheal Uny, where Captain James Williams, the head ore dresser, willingly braved the storm with me, that defied umbrellas, to show me the concentration works for that single mine, consisting of a host of different kinds of huddles, tossing barrels, and inclined planes, and sweeping hearths, and other concentration devices too numerous to mention, entirely covering the ground for two or three acres; where Captain Samuel Coad and M. Rogers discussed with me the merits of the very simple Cornish underground theodolite, in general use, and manufactured by T. A. Kissler, of Redruth, for $75; where I found the sorting and jigging of the ores being done by about fifty rosy young women and girls, in the neatest of white aprons, linen bonnets and the cleanest of stockings, (all which, strangely to me, did not seem to get dirty) singing to their work; how like a ghost out of the darkness and rain I walked into the blazing light of the furnaces of Redruth's smelting works, a mile up the valley, and satisfied my inquisitiveness, while I must have horrified the smelters, since access is ordinarily utterly barred to all but ghosts, in a storm; my visit to the house of Capt. Wm. Gribble, formerly of Grass Valley, now of West Wheal Tolgus mine; how I learned from the booksellers that there was no better book known to them in English than Budge and Haskell on Mining Engineering (30 shillings); how I got to Pool in time to attend a "Penny Reading" in the church, where all the young folks of *really* development were out, and behaving precisely as they would have done in Michigan or at San Rafael; and how I happened to wind up the day where there were gathered half a dozen of the jolliest bloods of the district, in a back room of the Treglown inn (carousing room, properly) with a bow window opening into a neglected garden, and a wooden wainscotting, amidst scenes of repeated draughts of ale, and pipes two feet in length in each man's mouth, consuming the landlord's tobacco, to songs of Merrie England, (the most amusing of which, to me, was one of our own most popular American songs of the war); all these matters I can barely allude to.

Descent into a Cornish Mine.

In company with the "Lord's Agent," Capt. Samuel Davy, on his quarterly visit, representing the land proprietor, Mr. Bassett, and Capt. Thom Miners, I went, next morning, through the Carn Brea mine, situated about like the mine shown in section in the view. There was more unfilled space, and less propping with timbers, than I had seen on the continent; the man-engines that carried us out were single, with a very long sweep, and stepping-off places, and were rather rudely constructed; the pumping arrangements were very superior, and the whole mine appeared to me to be worked on a basis of rigid but intelligent economy. The dressing works at the surface cover half an acre, and are very interesting, consisting chiefly of round buddles, sunk into the ground,—Borlase's and Hundt's. There is provided at the mouth the best washing and dressing room that I have ever seen in connection with any mine, and plenty of warm water, and clean towels; luxuries of slight cost yet great value to the toiling miner; and by me, in this instance, highly appreciated. Duck clothing, woolen underclothing, and a stiff, round-crowned felt hat, tallow candle, and clay daub, constitute the Cornish underground outfit.

The Carn Brea Hill.

Historically, topographically and geologically, the old Carn Brea is a notable hill. Carn is the Celtic word for a pile of rocks. It was on the top of the "carn" that the queer little old castle seen on the eastern end was built, the carn probably of an age older than historical time; the castle immemorial, and for aught we know dating as far back as the Phœnicians. Carn Brea was one of the sacred hills of the Druids. At several places on the summit, not far from the de Dunstanville monument, I could trace very distinctly the circular arrangement of blocks of granite, the remains of druidical temples. In one pile of enormous granite boulders there are scooped out of the rocks pot holes, which are popularly believed to have been used as sacrificial pans, where humans were formerly sacrificed, the lower ones being used to catch the blood flowing from above. The hill is a high granite mound or island, upon whose flanks the ancient Silurian ocean washed and deposited the killas, or clay slate, that contains most of the ore.

View from the Carn Brea.

A thousand mining stacks and a thousand *haldes* of ore and rock; Beacon Hill, a high bluff on the ocean's edge, away to the northeast; Redruth, Pool, and a hundred other smaller villages; the sweep of the wide ocean; the romantic looking fishing town of St. Ives, nestled down by the water at the foot of high hills far to the west. Behind St. Ives you can see something like a church tower, of semi-pyramidal pointing, that may stand as long as the pyramids. It is Knill's monument,—an eccentric, merry old Cornishman of two or three centuries ago, who died, and having money he could not take with him to the Druids' heaven, ordered this monument built, and willed that every year seven blith young virgins should come and dance around it. He left a liberal fund to distribute annually amongst the girls, and the joke of old Knill is that the ceremony is observed! They mean it well, in Cornwall as anywhere else, and come and get the money, and have a good time besides.

If we could See what is Underground,

What a stupendous work of ages would be here exposed—beggaring all the railroad viaducts in its heights, and the world's tunnels for length. For were the levels connected in one straight line, there would be a tunnel that would more than reach from the Lands End to Scotland, or 600 miles. Populations in the earth's bowels equal to three or four of our mountain counties, and machinery more than we have in all the mines of the Pacific Coast. The mines are being worked and paying, and will do so for ages, where worked on a common sense basis;—yet mining, our wise men of the West who have tried it tell us, is a losing business! Copper mining, that most miserable of all failures, is the stand-by. The names and lines in the ground plan all represent veins, cross-courses and mines.

Profits of Legitimate Mining.

The Dolcoath, Cook's Kitchen, Tin Croft, Carn Brea; the Roskears, Croftys, and Tolguses; the Seatons, etc., seen on the map, in the several runs or veins, are names within the profitable district 1x3 miles, that represent a known statistical yield, *each* of them $5,000,000 at least; while their probable yield not proven up by statistics, may be double or quadruple that sum in many cases. Honest work is done in Cornwall; and they stick to it for eight or ten years before they despair of profits, though not without most reasonable certainty of returns in the end. On the last page of the London *Mining Journal* may be seen, corrected to date, the lists of the mines: "dividend-paying," "non-dividend," or mines in abeyance, and the "calling" mines, that are making assessments; and the market values are fixed upon the following basis, as positively as law: A house in Cornwall is expected to pay for itself by its rent, in twenty years, or at five per cent. on the outlay, per annum; a mine is expected to pay in like manner in five years, or at 20 per cent. per annum. If the mine pays 15 per cent., the shares are held as only fair; if 25 per cent., they are held as very good; and the actual average run of the dividend mines is between those figures. £1 profit every year gives a market value of £5 per share, other things being equal. But the merits and promise of a mine will modify the result in the market; a far-seeing mine reporter being always on hand to see whether the mine justifies more or less than the dividends indicate. In the mines of Virginia City, where the shares are regulated by mortgages and lenders at a distance, much like playing upon a piano—an arrangement so much more systematic and controllable by the honest miner in San Francisco, though not based upon dividends nor the actual condition of the mine—it will surely be strange if stockholders, not to mention the honest miner in San Francisco, does not get rich; understanding so well what they are about! In Cornwall, all of the large mines have been "worked a second and third time,"—*i. e.*, abandoned and re-opened to great profit; a lesson of the value of good judgment in mining. Depth is a great feature there, the mines yielding better below, and often running from copper into tin. They proceed in their undertakings to a considerable depth upon indications,—the character of the gossan, or "iron hat" of the Germans, (the surface stains of the vein,) and upon what is known that the vein has made in the same district elsewhere as being good.

Costs of Mining.

The whole cost of mining varies from $22 to $25 per fathom on the vein. On levels this is six feet long, and height and breadth of the level, as given in the contract. The general cost, including the London City office expenses and milling, is estimated by J. S. Phillips (to whom I am indebted for many of the valuable points here given) at one-fifth the average general cost on the Pacific coast. Concentration alone of the tin ore costs at least the value of 12 lbs. of tin to the ton, when tin is worth $300 per ton of 2,240 lbs.—or 16¾ cents per ton. The costs of mining, reckoned by the ton, is about $4, or twenty five times as much as of concentration, on a rude estimate—*i. e.*, 300 lbs. of concentrated tin per ton average ore will cover the expense. By the fathom on the ledge, the average cost is £5 in tin veins. Copper can be mined and concentrated a little more cheaply than tin, requiring less treatment.

Labor, and Letting of Contracts.

A good common underground hand fit for responsible work, such as timbering, or shaft sinking and difficult places, gets $20 a month; a common hand less trusty $15. A good Superintendent always discriminates. Captains, or underground agents, or bosses, receive from $30 to $60 per month. The Superintendent or "Manager" from $40 to $250 per month, and he is not confined to one mine, having sometimes as many as five. The Manager goes around at least once a month to measure the work for the past month and "set" for the ensuing month, settling contracts with the workmen and making new ones. The price is fixed by the Manager and the mine captains in charge, who go down with him for the purpose. He examines the rock and writes on a slip the price he considers just, per fathom, covering the figures with his thumb; each captain does the same. The Manager then takes the captains' judgment, and averages their figures with his. Above ground he appoints an hour for workmen to come to his cuddy hole of a window, generally in a bow window in the office, through which the men are paid, and asks for bids, or inquires whether they will do the work at his price. Generally his price is the one, but sometimes the miners raise it; and it happens that they sometimes bid lower, when new men come who are anxious to get a foothold in the mine. The wording would be, on a shaft, for instance: "To be sunk by twelve men for the month of ——; to be carried twelve feet long by six feet wide at —— per fathom." The miners usually bid from 50 to 100 per cent. higher than they are willing to work for; but when the Manager's price is finally named with "Will you take it at that?" there is seldom a case but that some one offers.

"Market Mining Men" in Cornwall.

Stock miners exist in Cornwall too, but are soon found out by those whose business it is to find them out—the capitalists in London whom they seek to gull. In the mining district their role is understood from the first. Ballantyne, in his Cornish mining story, "Deep Down," (he is a Scotchman, and visited the place a year after I was there), describes the operations of one of these well dressed gentlemen in connection with "Wheal Doom" so graphically as to make one almost believe he has taken his character from out the Occidental or the Cosmopolitan hotel, San Francisco. He begins on the ground, on some unopened or untested lode, then proceeds to London, gets the name of some unscrupulous young lord, or capitalist or shyster, whose reputation is beyond his merit for honesty in the community, and forms a "company," with these, who never intended to invest a cent, at the head. The mine is brought very flourishingly into the market; and many a weak business man, or woman with some spare money to invest, is tempted into the fine business of imaginative mining. The doom of Wheal Doem in Cornwall looms up also in the mines of the west as we ride by—the speculators' mark of "Wheal done'em." There is a most execrable class of mining experts who lend themselves to these market miners, in making reports for them. I could mention some startling facts that have come to my knowledge of how "things are done," to the great detriment of legitimate mining, but am at present on another errand.

The Cost Book System.

In the carrying on of a legitimate mining enterprise it seems to me almost necessary that everything should be done honestly and above board. No reason can be assigned for secrecy to stockholders, other than the object of swindling them; for which mining affords facilities equal or superior to railroading. In Cornwall the evils of the corporation act have given rise and popularity to what is called the Cost Book System. Every shareholder, even of one share, can demand a sight of mine and book, into which every receipt and expenditure is entered and posted monthly; so that no secretary can mismanage, nor ring off stockholders' control, without the perfect knowledge and understanding of all the parties concerned. Should any ring mismanage, the shares of the minority thrown on the market at low figures, would depreciate the stock. Other features are: The facility with which it is applied to the settlements of disputes, the ease with which shareholders can escape from future responsibility, the precision with which they can determine their existing liabilities at any moment; and again the advantages which it affords to the successful development of promising undertakings, through the power possessed in raising from time to time just sufficient money to defray costs incurred, or expenditure required, in prosecution, and completely prevents the "freezing out" system in practice, by the controlling parties of the smaller stockholders. There ought to be no liabilities in mines worked upon the Cost Book system beyond those that accrue over a period of two to four months. A. B.

Principle of the Superheater.—Steam saturated with humid vapors cannot have the volume of elasticity of that which is superheated. Steam, as it is generally in the boiler, must necessarily, while rushing to the surface, on its passage to the cylinder, carry along with it a large amount of watery vapor. All this heated moisture requires fuel to raise its temperature. A proper application of a small amount of heat to this scalding vapor would convert it into steam and save it from premature condensation. The superheater of Carvalho does this. It is a very simple and comparatively inexpensive contrivance, that completes the process by converting this humidity into steam while on its passage from the boiler to the cylinder of the engine. The superheater consists of a pair of iron-heating chambers, cylindrical, to insure strength, and of the U shape. These contain a metallic filling, which draws the heat in from the sides of the chambers, and presents a large heating surface to the steam, breaking up its direct passage, and thoroughly drying every particle of it.—*The Alta Reporter's Fair Notes.*

The sulphur works of Lake county have been leased to Mr. J. T. Jeffries, the company's late superintendent, who has already commenced refining. The enterprise and assiduity of the owners of this mine, displayed in discovering improved methods for separating the sulphur from the salts, alkali, and other erudities with which it is, in its natural state, surrounded, has been rewarded by the production of a purer and better article of sulphur than can be obtained elsewhere on this coast—and competes successfully with the imported Sicily sulphur.

Mechanical Progress.

Steel Rails.

Althongh much has been said upon this snhject, it is as interesting as ever, and no less important. A long article in the New York *Tribune* has called forth letters to that journal from Abram S. Hewitt, the conclnsion of which, as expressing his ideas, and our own, of the importance of the subject, we copy: "In conclnsion, let me say that the conditions of the problem for making cheap steel, suitable for rails, are essentially different in America from what they are in Europe. The greater part of our ores contain phosphorus, which renders them unsuitable for the Bessemer process. But by the Siemens-Martin process pig iron containing phosphorus can be utilized, and the resulting steel welds admirably to iron, which is not the case with other kinds of cast steel, containing the same percentage of carbon. Hence, it is probable that steel-topped rails can be made more cheaply than rails all steel, except in those localities where the material is suitable for the Bessemer process. But it so happens that most of the phosphorus is mechanically combined with the oxide of iron in our rich and abundant magnetic ores. This peculiarity has just begun to attract attention, and there is, therefore, reason to hope that large amounts of material, now useless for the Bessemer process, will be rendered available for it by improved methods of treatment.

Again, these rich ores are admirably adapted to the so-called direct processes, by which the oxygen is expelled, and the resulting sponge of metallic iron left in a condition to be converted into steel by the Siemens-Martin or the crucible process. But these direct processes, although apparently so simple and inexpensive, have hitherto baffled the science of chemists and the practical skill of metallurgists. There never was a time when success was so necessary, or when so much talent, science, capital and energy have been devoted to the solution of this interesting problem; and I, for one, look for a successful result at an early day. With the production of cheap metallic sponge will come cheaper steel, cheaper rails, and cheap but safe transportation. Bessemer and Siemens are both engaged in trying to solve this great problem, each in his own way, and each devoting to the task not merely his great experience and high scientific skill, but the well earned fruits of past inventions, by which the cost of steel has been so reduced, as to be a successful rival to iron for uses the most ordinary. While I can not but wish them the success they deserve, I confess that, as we have the largest supply of suitable ores, I should prefer that the glory of this great and final achievement should be won by some one of our own inventors, who would thus rank himself with Franklin and Morse, and Howe and Goodyear, the American benefactors of all mankind."

HARDENING WROUGHT IRON.—An Englishman by the name of Wray has taken out a patent for hardening and carbonizing wrought iron in such a way as to give the surface a hard steely character, without interfering with its tough fibrous interior. For rails, shafting, armor-plates, and many other manufactured articles, this is desirable. Mr. Wray heats the articles in a reheating furnace, and while thus heated plunges them into a bath of molten cast iron. The length of time they are to remain in the bath will depend upon the nature of the article, and the effect desired. When the articles are taken out of the bath they are cooled by plunging them in water, in which may be dissolved salt, or other chemical or metallic substances which will facilitate the hardening of the surface.

THE UNION STOP WASHER.—This is a clever contrivance to prevent the nut on a bolt from turning. It consists of a disc, or two discs connected by a strap, of flexible metal, cut into a six-pointed star, in the center of which is the bolt hole. The washer being slipped over the bolt, the nut is screwed down and two opposite points of the star are bent up against its sides, holding it in a gentle but immovable embrace; no vibrations or expansions can make it turn. It does away with jam-nuts, and saves the expense of watching and tightening. Railroad engineers speak highly of it.

CUTTING UP LARGE IRON SHAFTS.—The Buffalo correspondent of the New York *Tribune* writes: "It is frequently very difficult to break up great shafts of cast iron when necessary to prepare them for the furnace. Old cannon have therefore sold low. Upon some, powder and nitro-glycerine have been tried in vain. Some have been burst by ice. Others by wedges driven by machinery, or long continued hard labor into the muzzle. At best it has been a slow, expensive process. Here, breaking is dispensed with; and they are cut in two by a continued stream of molten iron, which wears away the iron as a stream of hot water would eat into a mass of ice. The gun is rolled upon a frame in front of and level with the furnace mouth. Then the muzzle end is shoved in as far as possible, among other iron, the opening filled up and luted around the gun, the end of which is melted off. At the next charge it is shoved in another length, and is thus reduced until the breech can finally be rolled in and thus finished without any more expense than with pig or scrap iron."

ANOTHER NEW BOILER.—The *Artisan* gives the following in its report of the American Institute Fair: "The greatest curiosity in the way of a boiler on exhibition is that of Thomas Mitchell, of Albany. It consists of a horizontal wrought iron cylinder without any seam, and with hollow journals; and it has imparted to it a slow rotary motion. This boiler only has sufficient water supplied to it through one of its hollow journals to generate steam as fast as required; and the water thus admitted is prevented from assuming or remaining in the spheroidal state, by the rotary motion. The pressure in this boiler is regulated automatically by a self-acting valve, which only admits the water as fast as required, the valve being closed by a spring, adjusted by a screw, to shut off the water and stop the generation whenever the pressure of steam exceeds that for which the valve is set."

CHEMICAL FIRE ENGINES.—*Engineering* says that the principle of extinguishing fires by the use of water saturated with carbonic acid, has recently been extended by a Glasgow firm to engines, which can be worked either by manual or steam power, in such a way that the component parts required for the generation of the gas are forced separately into a vessel within which they mix, and pass beneath the self-created pressure through hose and nozzles. The apparatus comprises a wheeled carriage, the body of which is in the form of a tank made with sheet iron fixed upon angle-iron frames, and divided into three compartments. Pumps are fitted into the compartments, arranged to be actuated by a beam, on a rocking shaft which is provided with the usual levers for the application of power.

SETTING OF SAWS.—"A difference of opinion prevails among mechanics about the best way to set saws, some maintaining that the hammer and punch are superior to any of the patent setting tools now in use. A series of experiments which we saw performed some years since convinced us that the hammer and punch were imperfect tools for this purpose, although there is no doubt that the principle of the hammer and punch, as applied in some of the saw-setting tools which have been invented, is the best. A tooth bent and set by a blow will remain where it is put. This, on the contrary, can not be said of teeth which are bent by sets which act on the lever principle. Nevertheless, we have seen saws very perfectly set by the latter kind of tools." *Sci. American.*

PLATINIZING COPPER.—The following is from the *Quarterly Journal of Science:* "Add to a moderately concentrated solution of chloride of platinum finely powdered carbonate of soda until effervescence ceases, next some glucose, and so much common salt as will cause a whitish-colored precipitate. When it is desired to apply this mixture for platinizing, it is heated to 60° C. The objects to be treated are placed in a zinc vessel perforated with holes, which is then immersed for a few seconds in the mixture. On being removed the objects are washed and dried in sawdust."

GILDING POLISHED IRON.—"If a nearly neutral solution of chloride of gold be mixed with sulphuric ether and agitated, the ether will take up the gold and float above the denser liquid. When this auriferous ether is applied by a camel hair pencil to brightly polished iron or steel, the ether evaporates and the gold adheres. It is fixed by polishing with a burnisher."

Scientific Progress.

Dr. Hall on the Aurora Borealis.

A paper was read by Dr. A. W. Hall on Oct. 15th before the Polytechnic Branch of the American Institute, in which he enunciated the theory that the aurora is not due to electrical action, but is nothing but reflected sunlight. Dr. Van der Weyde takes issue with him; and in the *Artisan*, after giving an abstract of the arguments for the opposite view which he advanced at the same meeting, he adds:

"But the direct proof that the aurora borealis is by no means derived from the sun, is produced by the spectroscope, which does not show the lines peculiar to solar light and also to every object illuminated by the sun, but which in the aurora shows lines not seen in any other known luminous object. Moreover, Biot has proved that reflected light is always partially or wholly polarized; the auroral light, being not polarized, is therefore not reflected light, but self-luminous. This is, however, only a proof of what it is not; a proof of what it is, and which makes its identity with the well-known silent electric discharges *in vacuo* very probable, is, that it always proceeds from the magnetic pole, that the luminous beams passing high over our heads, from north to south, act on the compass needle, giving it an intermittent easterly or westerly deviation, exactly like an electric current would do after the law discovered by Oerstedt; and also that it induces such strong currents in telegraph wires that usually during the prevalence of an aurora the electric telegraphs are worked by it, without batteries, which is another phenomenon perfectly in accordance with the laws of electric induction."

AMERICAN ECLIPSE OBSERVERS.—The English prints speak in the highest terms of the zeal shown by American observers during the late eclipse, and the important gain to science due to their efforts. Prof. Young, of Dartmouth, is especially alluded to in reference to his announcement of his conclusion that the corona is a permanent aurora; and also to his beautiful method of determining the beginning and end of an eclipse, by keeping the slit of the spectroscope directed to the point at which the contact is to take place, and noticing the extinction and reappearance of the base of the bright line C in the spectrum of the chromosphere. We have before alluded to Prof. Young's notes.

OERSTED'S DISCOVERY CLAIM CONTESTED.—Dr. Adolph Ott writes the *Scientific American* in reference to the "law of Oersted," as it is called,—that magnetic polarity is at right angles to the electric current,—and says that although this law is generally supposed to be Oersted's discovery, and is so noted in most of the text-books, M. Hamel proved that the Italian physicist Romagnosi made the discovery in 1802. Dr. Ott furthermore says that Oersted must have known the fact, being in Paris at the time, where the subject was discussed in scientific circles.

PRESERVING ANIMAL SPECIMENS FOR FINE DISSECTION.—Dr. Alcock,—says the *Quarterly Journal of Science*,—proposed and practiced the following method: A saturated solution of corrosive sublimate in alcohol is prepared. When a dissection in water is in progress, a small quantity of this solution is added from day to day if there is any appearance of putrefaction; and by the time the dissection is completed, the specimen has become imperishable from the union of the corrosive sublimate with the tissues.

MATTER ALWAYS IN MOTION.—In the new volume of the "Smithsonian Contribution to Knowledge," is a paper by L. Magrini of the Museum of Florence, upon the "Continuous Vibratory Movement of all Matter, Ponderable and Imponderable." In this paper the attempt is made to prove that *movement is a fundamental law of matter;* that the movement always has existed, and *always will exist* so long as matter exists.

The Eozoon in Massachusetts.

H. C. Perkins says, in the *American Naturalist* for November: The remains of this, the oldest form of animal life thus far discovered on our globe, and found in the azoic [Laurentian] rocks of Ottawa, Canada, have, it is confidently believed, been within a few days detected in the serpentine of our "Devil's Den." The animal, if it may be so called, has been arranged by naturalists among the rhizopods, and would seem to have been a jelly-like living mass, spreading out on the bottom of the sea, capable of secreting calcareous partitions, and thus forming small chambers or cells, the interior of which has been filled by serpentine, which was deposited from the waters of the ocean, and took the place of the decomposing animated mass. This discovery, resulting from a visit of Prof. T. Sterry Hunt of Montreal to our neighborhood, will excite new interest in our limestone and serpentine quarry among geologists, and throw additional light upon the character and age of the rocks in this region. Mr. Edwin Bicknell (Preparator of the Peabody Academy of Science, Salem) has, by a microscopic comparison of a specimen of Eozoön, furnished by Dr. Dawson of Montreal, with one from the Devil's Den, fully established the discovery. In a letter from Mr. Bicknell which we have seen, he says: "I have no hesitation in saying, if the Canadian specimens is Eozoön, the Newburyport one is also."

APPLIED CHEMISTRY—MADDER DYES.—*Engineering* says the reds afforded by madder are in many respects preferable to those produced from coal tar. For instance, they resist the action of light and the application of soap. The coloring matter is due chiefly to the presence of alizarine that is extracted by the action of sulphuric acid on the madder first reduced to powder. M. Schutzenberger points out that madder contains alizarine, purpurine, pseudo purpine, an orange colored substance, soluble in alcohol, yielding purpurine on being decomposed by heat, and purpuro-xanthine, a yellow-colored crystallizable substance. He considers each of these principles as fit for dyeing purposes, although alizarine, which is the best, has hitherto alone been employed. The "fastness" of the different tints of colors produced from these dyes seems to vary in the inverse ratio of the quantity of oxygen contained in the substance in excess of the hydrogen. With an increase in the quantity of oxygen a violet color becomes gradually changed into various shades of red. Many of the details of the Turkey-red dyeing become, under this view, capable of explanation, that were formerly but little understood.

INCREASE OF WEIGHT DURING COMBUSTION.—The following experiment is described in the *Chemical News*: A small horse-shoe magnet is hung up at the beam of a balance sufficiently sensitive to turn with centigrammes; the poles of the magnet are immersed for a moment in the *limatura ferri* of the chemists' shops, and a beard of small particles of iron is caused to adhere to the poles; by means of proper weights placed on the scale-pan at the other end of the beam the equilibrium is restored. This having been done, the finely-divided iron is kindled, by approaching to it the flame of a Bunsen gas burner, and continues to burn. While burning, it will be seen that the arm of the balance on which the magnet is suspended considerably deviates from the horizontal position, thus indicating an increase of weight on the side where the experiment is going on.

SOLUBILITY OF SULPHUR IN COAL-TAR OILS. M. Pelonze finds that the solubility increases with the density of the oil and the temperature. Thus, 100 parts of a light benzole, sp. gr. 870, and a boiling point from 80° to 100° Cent., will at the ordinary temperature dissolve only 2·1 parts of sulphur, and at 100° Cent., not more than 15·5 parts. But a heavy oil, having the sp. gr. 1·020, and boiling from 220° to 300°, will at the common temperature take up 7 parts of sulphur, and at 100° 54 parts. At higher temperatures, the heavy oil will dissolve an indefinite amount of sulphur, but above 200° decomposition of the oil takes place, and sulphuretted hydrogen is evolved. The best oil for extracting sulphur would appear to be one which has the density ·995, and boils from 180° to 210°.

ARTIFICIAL CARBOLIC ACID.—Berthelot finds that by treating acetylene with fuming sulphuric acid it is converted into a sulpho compound, $C^4 H^2 S^2 O^4$. The potash salt of the above compound on being fused with caustic potash yielded copiously carbolic acid.

Farming and Gardening.

Communications for this department are solicited from all parts of the Pacific States and Territories.

Small vs. Large Thrashing Machines.

There appears to be a growiug disposition, in many parts of the Eastern States, to give up the use of large thrashers, and separators, which itinerate from farm to farm, over a large district, with their large equipment of horses and men, and substitute in their stead smaller machines, to be owned by individual farmers, or at most by a combination of two or three neighboriug farms. The advent of a large power thrasher upon a farm, with its army of men and troop of horses, is beginning to be regarded, in its destructive effects, as very much like a "Morgan raid." The work performed by these machines is thought to be out of all proportiou to the noise and confusion they produoe, ina well-regulated household, and the waste and cost which they entail.

It is held that a small machiue, capable of being operated by two horses and three or four men, the regular farm laborers perhaps, is much cheaper, and is attended with much less waste and coufusion. A small machine, such as indicated, can be operated at leisure, at intervals betweeu other duties, or at the perfect oouvenience of the farmer.

Upon the subject of relative cost for thrashing and separating, between the two machines, the following figures have been given: It is claimed that with a 10-horse thrasher, requiring twelve bands, and turuing out 300 bushels of wheat per day, the cost is 15 1-6 ceuts per bushel; while a 2-horse machine which can be ruu with four hauds, will turn out 150 bushels at a cost of from eight to nine cents per bushel. This estimate is on the assumption that all the hands are hired in both cases; wheu in fact with the small machine the work can be generally done by the regular farm hauds, and at a much less cost than by hands especially hired for a short time only.

It is also claimed that a much greater waste inevitably attends the larger than is encountered with the smaller macbiue. This waste grows out of the fact tbat the larger machines are always fed heavily or forced, and with more or less irregularity, whereby many heads of grain escape unshelled, while much that is shelled is carried over and lost with the large bulk of straw. Moreover, the large machines are always operated in the open field, where much grain is scattered upon the ground and lost; while in the use of smaller machines more care will be observed, or they may be operated npon temporary or permanent floors, where all such wastage may be swept up and saved.

Many extensive farmers in the uorthern Mississippi States, who have used both, say that they would not allow a large machine upon their premises, if it would do its work free, as the waste, extra cost aud trouble would amount to more than the entire cost and trouble of the small machines. It is quite apparent that the popnlar current at the East is setting in the direction of small thrashers. In Penusylvania, very little is known of large machines. They never did receive much favor in that State. Nearly every good farmer there owns his own machine.

How far snch practice would be applicable in California, we are not prepared to say. Our long, dry harvest time is much more favorable for open field work than the uncertain weather of the Eastern States, where barns are an absolute necessity, and where nearly all such work *must* be done under covor. One thing, however, is quite certain: we need] some system by which our farm labor may be made more continuous and regular. Diversified farming is a positive necessity to success in that pursuit, and must eventually be more generally introduced on this coast. Tbat would require barns and store-houses, with which the use of small thrasbers might the more readily and economically be introduced—and possibly be made more profitably thau the system now in universal use here.

Agriculture in the Mines.

As an evidence of the interest felt iu behalf of the introduction of agriculture into the mining counties, we notice that the local mining papers are everywhere calling attention to the advantages which their respective localities preseut for such industry. There is scarcely a mining county iu the State which might not raise every pound of produce needed for its inhabitants, eveu to flour and butter. The introduction of agriculture into the mines is the sure and only road open by wbich our mining counties can relieve themselves from the pecuniary embarrassments under which most of them are now laboring. Apropos to the above, we clip the following from the Alpine *Chronicle*, oue of our mining exchauges:

"Srictly Mining."—As some, in this county, have considerable to say about this county being a "strictly mining county," we cite the fact that the ranches, occupied, comprise, per assessment roll, 3,434 acres. Most the whole of the county is fitted for agricultural purposes. The mountains are good for grazing and the raising of hay, and the valleys are capable of producing every kind of grain and vegetable; and it only requires a ready market to stimulate and develop the agricultural industry of Alpine county. In Hope Valley aloue upwards of thirty tons of butter were made tbis season, valued, forty cents per pound, at the bandsome sum of $24,000.

Rain Fall.—Somebody has beeu going into an elaborate calculatiou of the amount of water which fell during the great storm at the East about the first of October. In weight it is set down at a fractiou over twenty-eight million tons. If this mass of water should be collected in a single cbannel, it would form a river twenty feet deep, a quarter of a mile wide, and 6,500 miles long. This was the volume and weight of water which fell within thirty-six hours, sweeping away many millions of dollars worth of property and destroying a great uumber of lives—doing more damage, in fact, than half a dozen such earthquakes as that which occurred in thisregion one year previously, almost to a day. Not the least amoug the marvels of such a rainfall, is the fact that the atmosphere can contain, at one time, such an immense weight of water.

To Destroy Weeds in Walks.—Almost every person, in country or city, has some walk which they wish to preserve free from the intrusion of weeds or other growth. Much time and expense is often spent to secure such a result. The Loudon *Journal of Horticulture* gives the following as a most efficient preparation for such a purpose: "One pound of arsenic is dissolved in three gallons of cold water and boiled, stirring it while boiliug, then add seven gallons of cold water, and two pounds of crushed soda, applyiug it to the walks with a fine-rosed watering pot, taking care to keep it from the box-edging or grass. The above quantity will be enough for twenty-five square yards. It must be applied in dry weather only."

Profits of Farming.—Statistics show that the people of Vermont, a State almost exclusively devoted to agriculture, hold more money and other property *per capita* than the people of any other State iu the Uniou. If this is so, it speaks volumes in favor of the propositiou that farming, intelligently pursued, is profitable.

A Big Crop.—W. J. and Noble Clark, on the old "Buckeye Ranch," secured a crop of wheat of uo loss tban 50,000 bushels—tbis, bcsides other crops, fruit, stock, etc. The yield of wheat averaged twenty-seven bushels to the acre. —*Mountain Democrat.*

Stockton Correspondence.

[concluded.]

[Written for the Mining and Scientific Press.]

Wagon Manufacturing.

Mattison & Williamson also manufacture wagons of all kinds. There bas been quite a change iu this business witbin a few years. Heavy wagous are not so much in demand as formerly, although the teams are larger than ever before. Experience has settled the fact that a heavy load hauls easier over yielding ground aud rough roads on twelve to sixteen wheels than ou four wheels; aud so, while more wagons are required, wagons tbat are designed to carry over eight or ten thousand pounds are seldom ordered. Iron hubs are not so much used as formerly, owing to the danger and inconveuience from "drawiug tho sun," or heating, during the uninterrupted sunshine of summer. Stockton is renowned for her wagons and carriages, and several husy mauufacturiug establishments are worthy of note.

Wharf Improvements, Etc.

About the wharves I found things quite lively. The heavy freight mostly reaches this city by steamboat, as before tbe railroad was finished; although tbe low rates of transportation are constautly gaiuing favor for the W. P. R. R.

In Stockton slough a dredging machiue is constantly at work widening and deepening the cbannel. The dirt removed is used to raise and lengthen the streets along the wharves, which are also being lengthened and repaired. And I may add here that much work is being done in raisiug the grade of the streets throughout the city.

Steamboat Building.

On Mormou slough I found the hull of a new steamboat on the stocks and in rapid progress of completion. The materials are all of the best quality, and the fastenings very substantial. The work is all done by the day, and in the most thorough manner. This boat is designed for a stern wheel, is 120 feet long, with 30 feet beam and 5 feet sides. It has seven keelsons,—three 6x16, two of them 3-inch planks extendiug to the deck to form water-tight bulkheads, and two corner keelsons 8x8 square, kuuckle amidships, moulded fore and aft. The boat is being constructed for river traffic, aud is to be driven by two 14-inch engines, 5 feet stroke. Mr. C. M. Small, an experienced workman—the architect and master-builder—informed me that it will be ready for launching in about six weeks; in good season for the opening of the San Joaquiu river navigation.

The Lumber Yards

Are well filled, and the saw-mills aud fiuishing works all busy; and the many ranch teams loading with such material sbows tbat tbe county is building up itself, as well as establishing the growth of a city.

The Storehouses

Are being filled witb grain. Owing to the low prices of grain and scarcity of money, farmers are paying storage and 2½ per cent. per mouth on money advanced on their grain.

The Flouring Mills

Appear to be doiug a rushing business, and striving to make good flour; but the quality of wheat this season is below an average.

Foul Wheat.

I find it a standing complaint that wheat is generally not well cleaued; in fact, that it is brought to market by farmers in very dirty order. From many samples which I havo seen and examined, I am compelled to sympathize with tbe complainants in this case. While nice, clean wbeat finds a ready sale at a fair price, abont nine-tenths of all tbe wbeat sold is *discounted*, and ought to be unless better cleaned.

Cleaning Wheat.

Oue is constrained to bolieve that tbere must be either something radically wrong in the separating apparatus uow used, or else that the difficnlty of cleaning is insurmountable. My opinion is, that no matter how badly mixed the wheat is with chaff, sand or dirt, it can be tboroughly separated. Tbe difficulty lies in indifference, in carelessness, or in imperfect machinery. In every flouring mill that I bave visited in the State, I find that there is more difficulty and perplexity experienced by the millers with their cleaning apparatus than with everything else about the mill. The several new methods of separating lately patented sbow that there is a class of men awake to the importance of tbis necessity; but whether any of them will fully meet the requirements, is a matter admitting of some doubt.

At the storehouse of Cbarles & Copely I saw

A New Machine for Cleaning Wheat,

Just built by them, and working with steam power. How it will serve the purposes I did not ascertain. They claim an improvement in suctiou fanuing. The wheat falls eight feet down the chimney, right and left, from step to step, across the flue to the screens. The wind is let in through several narrow openings under each step, so as to cut directly through and through the falling wheat, thus subjecting it to equal, thorough and repeated fanning. This certainly appears to be an improvement on the old style of flue, wbich allows the wheat to fall to one side and the wind to escape up the other side. The screens are set at the ordiuary inclination, and have a plane, oscillatiug, rectilinear motion, so as to slide all barley, oats, etc., *over* the screens, instead of *jumping them through* with the wheat. Other screens allow all small seeds to separate from the wheat. [We hope to hear from Charles & Copely, and learn the particulars of the working of their machine.—Ed.]

What farmers most require is a thorough and efficient separator, which can be attached to any thrashing machine—one tbat will do all work at once, saving all tbe good grain and all extra handlings and expense. The iuferior grains and seeds are not wasted, but most ecouomically used, wheu fed at home to pigs, poultry and farm stock. But tbis thing is "sure and certain:" whatever is done or left undone, the farmer must eitber lose good prices and wastage from bad cleanings, or be able to command the market with a good article of clean wheat. S. H. H.

Why Pork Shrinks in the Pot.

An old farmer, in the *Homestead*, auswers the above question as follows: "Hogs kept low in flesh in summer and autumn, and then fully fed when shut up for fattening, will gain fast, appear to be doing well, and look well when dressed, but will weigh light, aud boiling will prove the flesh to bo puffy. The little cells, of whioh the meat seems to be composed, are filled with gelatinous matter, wbich has not had time to become hard and firm—it is partly soluble in boiling water; hence pork shrinks in the pot. The same kind of pork results from feeding mostly on animal food, as at slaughter-houses, and from irregular feeding, or from killing sows when in heat.

To produce pork that will not shrink in the pot, the writer says he first has a good breed; they are never allowed to fall off in good condition from the start they get from their mother's milk, or never know stint or stuut while alive. Early in autumn he takes them up in high order, and begins to fatten them, increasing their rations of grain till they are fat aud ready to kill. Then he feeds them oue week more, and makes due preparation for butchering, wbich is done early in the day by good hands. When thoroughly cooled, cuts up and salts down (not allowing his pork to freeze) using plenty of the best salt, aud filling up the barrels with brine, and not with water, as some do. This method secures pork, white, firm, compact, and almost as solid as marble, whicb, when well cooked, will be tender, juicy, melting, and delicious, never shrinking in the pot."

The English Walnut is a perfect success in Los Angeles county, where it grows to perfection. The only trouble in gathering the fruit is the picking it up, as every nut disengages itself from its bark aud falls to the ground when full ripe. It is unaffected by heat or moisture. There are over 15,000 of these trees in Los Angeles county, one-fourth of which are in bearing. Their average yield is about $30 to the tree, aud the crop is considered a sure one.

Stock and Finance.

Weekly Stock Circular.

By Associated Brokers of the S. F. Stock and Exchange Board

SAN FRANCISCO, November 26, 1869.

Financial.

Money is comparatively easy in this market, although the savings and loan institutions are not free lenders, nor have they been for some time past. Depositsdo not come in as plentifully as usual, the money being used for outside operations. The delay in arrival of many foreign vessels, now fully due, has shortened the demand for customs, and our importations have also fallen off in volume, while the depressed condition of mining stocks, until very recently, had the effect of sending money to this market for investment in some of the most prominent. But a gradual restoration of confidence is doing more to ease the market than all other causes combined. A fair business is being done in nearly every line, with reasonable profit. Large stores of wheat remain to be sold, and there is some ground for the belief that the prices will soon touch the lowest point in Liverpool, leaving hope for early reaction. The temptation for English capitalists to invest in breadstuffs while at their lowest cost is too strong to be withstood. Money is abundant in England and breadstuffs are always sure of finding demand. Our merchandise markets are overstocked with Eastern and foreign goods, and but little drain will be experienced from that source for some time to come. Farmers are paying their bills with coin received for their products, and country dealers are thereby enabled to liquidate their obligations to metropolitan merchants. Mining advices show an improved condition, while our bullion receipts are increasing. All these are valid reasons to predict a growing ease in our money-market, which restores confidence and lets coin loose. We learn of no difficulty in obtaining accommodation at 1@1¼ per cent. per month, on well assured call loans, and for long periods at 12 per cent. per annum, the security being ample. Bullion is in good supply. We quote gold bars at 870@880; silver bars from par to ¼ per cent. off; currency bills on Atlantic cities are charged 237½ per cent. premium on gold; sight coin drafts pay 1@1¼ per cent. premium; telegraphic transfers are effected at 1¾@1¾ per cent. premium; sterling exchange, 483½d; commercial exchange, 49¾@49½d; Mexican dollars, nominal at 5 per cent. premium; gold in New York, November 26, 124⅝; legal tenders in San Francisco, 80@80¼. The fluctuations in the thing called paper money, erroneously attributed to gold, are something wonderful, and furnish the strongest evidence of the necessity of returning to a specie basis as soon as possible. On the 24th of September, gold was rushed up from 130 to 160, which is another mode of saying that paper had depreciated to the same extent by the manipulations of a villainous clique. On the 24th of November—only two months—gold was quoted at 124¾, which is another way of stating that paper had appreciated to a comparative extent. How is it possible for business to flourish under such circumstances? Every person dealing in currency values is kept perpetually in the dark.

The exports of Treasuro from Nov. 1st to date have been been as follows:

Nov. 4—Per America—		
To China	$1,164,338 85	
To Japan	2,000 00	
		$1,166,338 85
Nov. 1 to 4—Overland to New York		22,000 00
Nov. 5 to 11—Overland to New York		209,815 09
Nov. 17—Per Golden City—		
To England	$450,514 41	
To France	55,559 82	
To Central America	10,000 00	
To Panama	20,000 00	
		536,074 23
Nov. 12 to 25—Overland to New York		204,200 58
Total since November 1st, 1869		$2,146,468 74
Previously this year		32,531,657 85
Total since January 1st, 1869		$34,673,086 59
Corresponding period, 1868		32,179,650 91
Increase this year		$2,493,435 68

City Stocks.

The transactions in miscellaneous securities during the past week have been much larger than for some time past. We note sales of California Steam Navigation Co. stock at 47@46 per cent.; San Francisco Gas at $88; Spring Valley Water at $63; and Sutter St. R.R. (preferred) at $16 per share.

The returns of our local insurance companies to the Internal Revenue Department for the month of October, and previously this year, have been as follows, upon a currency basis of 74 cents on the dollar for the month of January, 77½ cents for February and March, 75½ cents for April, 73½ cents for May, 74½ cents for June and July, 74 cents for August, 74½ cents for September, and 75½ cents for October.

	October.	*Previously this year.*	*Total.*
Pacific	$102,051	$991,504	$1,093,555
Union	32,057	370,690	402,857
Fireman's Fund	36,149	306,187	342,336
California	10,867	95,858	106,725
Merchants' Mutual Marine	24,871	233,092	267,873
Occidental	22,280	210,574	232,864
Home Mutual	15,521	131,030	146,551
Peoples'	20,122	162,917	183,039
Oriental	7,032	11,894	18,926
Total	$280,960	$2,513,856	$2,794,826
Same time in 1868	229,836	1,654,789	1,884,625
Increase in 1869	$51,124	$859,077	$910,201

The above statement shows a decrease of $29,167 from the receipts in September. The receipts of the several companies in October as compared with September show the following difference:

	Increase.	*Decrease.*
Pacific	.....	$27,052
Union	.....	9,223
Fireman's Fund	$4,036	.....
California	.....	4,705
Merchants' Mutual Marine	4,025	.....
Occidental	.....	1,676
Home Mutual	.....	1,643
People's	60	.....
Oriental	1,021	.....

The receipts of the city railroads for the month of October and previously this year were as follows:

	October.	*Previously this year.*	*Total.*
Omnibus	$24,283	$222,095	$246,378
North Beach & Mission	26,427	218,930	245,357
Central	19,770	153,670	173,440
Front Street, Mission & Ocean	9,627	83,907	93,534
Market Street	11,890	163,814	170,404
Potrero and Bay View	3,744	27,805	30,549
City	5,763	13,102	18,865
Totals	$100,204	$825,323	$925,527
Same time in 1868	89,044	745,974	835,018
Increase in 1869	$11,160	$79,349	$90,509

As compared with the total receipts in September, we find a decrease of $264. The receipts of October as against September show the following difference:

	Increase.	*Decrease.*
Omnibus	.....	$ 898
North Beach and Mission	.....	243
Central	.....	64
Front Street, Mission and Ocean	$ 306	.....
Market Street	385	.....
Potrero and Bay View	.....	285
City	525	.....

Mining Share Market.

Although the transactions in mining shares at the Stock Board have been quite large since our last similar reference, still we notice a very perceptible decline in prices of all leading descriptions. A larger number of White Pine stocks changed hands than for some weeks past, showing that the interest in those mines is gaining strength here. We also observe that capitalists from the East, upon satisfactory investigation by competent parties, are beginning to seek investments in that region; all of which evidently proves the richness of that silver-bearing locality. In this connection we make the following extracts, from the *News* of the 20th: "A gratifying improvement in the bullion shipment over that of last week is shown; the shipment for this week being $57,331.48, against $32,632.33 for last week. In September, the price of milling was reduced to $20 the ton. Since then, the price has again dropped; or at least is reduced by arrangement, so that large lots can be contracted for at $16 the ton. This accounts for the circumstance which perplexes some; namely, that the bullion shipment has not increased in proportion to the increased number of stamps. With the price for crushing reduced, mine superintendents prefer to work all ore, with scarcely any assorting. Thus the average yield of ore in mill for the last quarter was $58.59 per ton, while for the quarter ending June 30 it was $99.75 per ton. During the last quarter the number of tons of ore worked was 10,329, while for the quarter preceding the number of tons was only 4,174. Thus, we are working cheaper ore, and a larger amount of it—getting out the wealth of the mines more closely, affording more work, and consequently showing a lower average yield."

KENTUCK—has been in moderate request at declining rates. The annual meeting of this company was held on the 24th inst.; and from the Secretary's statement we take the following:

RECEIPTS.

Cash on hand, Nov. 1, 1868	$ 38,825 28
Bullion product	805,732 82
Premium on bullion	963 84
Assessments—Nos. 1 and 2	40,000 00
	$885,521 94

DISBURSEMENTS.

Reduction of ores	$374,895 45
Labor	139,095 55
Dividends—Nos. 27 and 28	100,000 00
Advance to Virginia & Truckee R.R.	75,000 00
Timber account	21,265 01
Hoisting ores	12,381 48
Mine supplies	12,920 63
Sundry accounts	70,883 28
Cash on hand, Nov. 1, 1869	79,080 54
	$885,521 94

From the Superintendent's report we copy the following comparative tables:

Year.	*Ore yield, tons.*	*Gross yield.*	*Net yield.*
1868	31,390	$1,257,563 85	$515,043 13
1869	27,876	804,732 82	178,531 70
Year.	*Yield per ton.*	*Cost of Production and Reduction.*	*Net profit.*
1868	$40 06	$23 65	$16 41
1869	28 88	22 47	6 41

"The poor exhibit of the present year," continues the Superintendent, "as compared with the results of the previous year, is mainly, if not solely attributable to the great fire which occurred in the mine on the 7th of April last, which for nearly five months caused an entire suspension of work in the principal ore-bearing localities. In the meantime all possible efforts were made by means of air-drifts and winzes, and powerful air-blasts from the surface, to reach the ore bodies on the 800 and 900-levels, which, on the 20th of August last, we succeeded in doing, and commenced extracting ore; and since that time have extracted, on an average, 130 tons of ore per day." During the fiscal year, 27,867 tons of ore were extracted—the Old West Ledge, between the 400 and 200 levels, yielding 6,667, and the East Ledge as follows: Between 700 and 550 levels, 9,500; 800 and 700 levels, 10,750; and 900 and 800 levels, 950 tons. The following named gentlemen are the Trustees for the ensuing year: J. D. Fry, (President) A. Hayward, Thos. Sunderland, A. K. P. Harmon, and Wm. Sharon. Secretary, H. C. Kibbe. Superintendent, J. P. Jones.

HALE & NORCROSS—has been in fair request at rather lessened rates. For the week ending Nov. 20th the yield from the upper mine amounted to 466⅓ tons, and the lower mine 519 tons—total, 985⅓; previous week, 1,030½ tons. On the 21st inst. Cross-cut No. 1 had penetrated the ore body 29 feet; in No. 2 they were drifting north and south on the vein, and No. 3 had been carried in 48 feet. On the 23d they were making preparations to extract ore from Nos. 1 and 2, and were running drifts to connect these cross-cuts. On that date No. 3 drift had reached the west wall, tho ore being 49 feet wide at that point. The raise from this cross-cut is now upward of 20 feet above the level. As yet but a small amount of ore has been taken from the sixth level, but hereafter about one-half the supply will come from that level.

CHOLLAR-POTOSI—has receded under large sales. During the week ending Nov. 19th, 898 tons of ore were extracted, against 874 tons the previous week. The Blue Wing locality shows considerable improvement. The drift west from the main trunk, passing through the Grass Valley ground, has come out in the old Santa Fé slope, meeting with no ore while running the drift.

GOULD & CURRY—was in the market to a limited extent at declining rates. They extracted 367½ tons of ore during the week ending Nov. 22d. At the seventh station, the cross-cuts to the west are each in 40 feet. The cross-cut from the drift going south has been carried through clay and porphyry, and the one running north is altogether in porphyry.——BULLION levied an assessment of $7 per share on the 22d inst.

ONE of the best and quickest ways to obtain large numbers of desirable immigrants on the Pacific Coast, would be to provide some reliable means for them to obtain subsistence when they arrive here.

THE "STONE GIANT" is now on exhibition in a hall in Utica, N. Y., and a scientific report on the same is expected soon.

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the MINING AND SCIENTIFIC PRESS and other Journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Alleghany Cons., Sierra co., Sept. 24, 30c.	Oct. 25	Dec. 6*
Bromide Tunnel, White Pine, Nov. 5, 20c.	Dec. 9	Dec. 28
Bucklin, White Pine, Sept. 30, 5c	Nov. 10	Nov. 30*
Belcher, Storey co., Oct. 21, $2 50	Nov. 22	Dec. 11
Crown Point, Storey co., Nov. 5, $7 50	Dec. 9	Dec. 28
California Slate, Oct. 15, $1	Nov. 15	Nov. 27
Cons. Virginia, Storey co., Oct. 1, $1.50	Nov. 4	Nov. 20
Coney, Amador co., Oct. 14, $5	Nov. 20	Dec. 13
California S. M., White Pine, Oct. 19, $1.50	Nov. 22	Dec. 13
Chicago and Detroit Cons, July 16, 50c.	Dec. 4	Dec. 27*
California, White Pine, Oct, 19, $1.50	Nov. 22	Dec. 13.
Cherokee Flat, B. G., Butte co. Nov. 6, $5.	Dec. 10	Dec. 28
Cons. Virginia, Storey co., Nov. 3, $1.50	Dec. 8	Dec. 31
Daney, Lyon co.	Nov. 25	Dec. 4
Evening Star Cons., W. P., Oct. 19, $1	Dec. 1	Dec. 20.
Flowery, Storey co., Nov. 12, $1	Dec. 16	Jan. 7
Imperial Storey co., Nov 15, $10	Nov. 20	Jan 11
Julia, Virginia Dist., Oct. 15, 50c	Nov. 18	Dec. 6.
La Hianca, Mexico, Nov. 9, $1	Dec. 4	Dec. 21*
Morning Star, Alpine co., $1.50	Nov. 15	Dec. 6
Meadow Valley, Lincoln co., Oct. 9, 25c.	Nov 11	Nov. 30.
Manchester, Alpine co., July 16, 0c	Dec. 4	Dec. 27
Mammoth, White Pine, Oct. 28, 30c	Dec. 7	Dec. 28
Mineral City, W. P., Nov. 3, $1.50	Dec. 6	Dec. 17
Mahogany & G. H., W. P., Nov. 8, 10c	Dec. 14	Jan. 4
Noonday, White Pine, Oct. 11, 30c	Nov. 18	Dec. 9
North Bloomfield, Nev. co., Nov. 6, $5	Dec. 10	Dec. 28
Noonday, W. P., Nov. 13, 50c	Dec. 20	Jan 10*
Ophir, Storey co., Oct 29, $2	D c. 2	Dec. 24
Onelda, Amador co., Oct. 5, $10	Nov. 10	Nov. 30
Pilot, W. P., Nov. 23, 10c	Jan. 3	Jan. 18*
Pesqhontas, El Dorado co., Oct. 28, $5	Dec. 20	Jan. 12.*
Rising Star, Idaho, Nov. 5, 50c	Dec. 18	Jan. 15.
Rathburn, White Pine, Oct. 26, 50c	Dec. 1	Dec. 22.
Rocky Bar, Nev. co., Nov. 23, $300	Dec. 27	Jan. 13
Silver Star, White Pine, Nov. 2, 15c.	Dec. 17	Jan. 3.*
Segregated Belcher, Storey co., Oct. 24, $1	Nov. 25	Dec 11.
Silver Vault, W. P., Nov. 22, 5c	Dec. 23	Jan. 24
Sacramento and Meredith, Nov. 15, $1	Dec. 22	Jan 10
Tallulah, Nev., Nov. 22, $2	Dec. 31	Jan. 25
Taylor, El Dorado co., Nov. 16, 30c	Dec. 20	Jan 10.*
Tecumseh, Calaveras co., $5	Nov. 17	Dec. 8
White Pine Mutual, Sept. 29, 50c	Nov. 3	Dec. 7

MEETINGS TO BE HELD.

Original Hidden Treasure	Meeting, Dec. 11
Taylor M. & M. Co	Annual Meeting, Dec. 13*

LATEST DIVIDENDS—(Within Three Months).

Amador Co., div. $6 per share	Payable Nov. 8, 1869
Chollar-Potosi, div., $1	Payable Nov. 10, 1869
Eureka, div. $7 50	Payable Nov. 8, 1869
Golden Rule, Tuolumne co, div 50c	Pay. Oct. 26, 1869
Ida Elmore, div. $1	Payable Nov. 10, 1869
Kentuck, div., $10 per share	Payable Nov. 19, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct. 10, 1869

*"Advertised in this journal.

Latest Mining Stock Prices Bid and Asked,

AT THE S. F. STOCK AND EXCHANGE BOARD

FRIDAY EVENING, November 26, 1869.

WASHOE DISTRICT, NEV.	*Bid.*	*Asked.*
Alpha	19	19½
Belcher	16	16½
Bullion, G. H	—	10
Crown Point	12¾	13
Cole (Va.)	—	—
Confidence	20	—
Chollar-Potosi	21	21½
Daney	—	1
Exchequer	—	10
Empire M. & M. Co	60	—
Gould & Curry	75	76
Gold Hill Quartz	20	25
Hale & Noreross	172	173
Imperial	45	46
Julia	¼	—
Justice and Independent	3	3½
Kentuck	169	—
Lady Bryan	8	8½
American	—	—
Occidental	14	14½
Ophir	14	14½
Overman	86	—
Segregated Belcher	—	8¼
Savage	58	58½
Sierra Nevada	9	12
Yellow Jacket	45¼	45¾
MISCELLANEOUS DISTRICTS.		
Amador (California)	200	—
Aurora, White Pine	16	18
Eureka, (California)	240	—
Golden Chariot (Idaho)	17½	22½
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, November 26, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1½c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1½@1¾c ₱ lb; Plate, 1½c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2½c ₱ lb.			
Scotch and English Pig Iron ₱ ton	$29 00	@	30 00
White Pig ₱ ton	27 50	@	28 00
Refined Bar, bad assortment, ₱ lb	— 03	@	— —
Refined Bar, good assortment, ₱ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04¾	@	— —
Plate, No. 5 to 9	— —	@	— 04¾
Sheet, No. 10 to 13	— 04¾	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5¾
Sheet, No. 24 to 27	— 05	@	— 6¾
COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb			
Sheathing, ₱ lb	— —	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 20	@	— 21
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22
TIN PLATES.—Duty: 25 ₱ cent. ad valorem.			
Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— 40	@	— 42½
STEEL.—English Cast Steel, ₱ lb	— —	@	— 15
QUICKSILVER.—₱ lb	— 55	@	— 60
LEAD.—Pig ₱ lb	— 7½	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— —
ZINC.—Sheets, ₱ lb	— 10½	@	— 11
BORAX.—California, ₱ lb	— 38	@	— 40

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Nov. 26, 1869.

W. T. Atwood states the following as approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		*Per ton*
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	35 20	30 " "	76 00
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

THE TEMPERANCE MIRROR AND DIRECTORY, a monthly paper, will be started in San Francisco, Jan. 1st, by Harry Andrews and J. W. Mackie.

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, November 26, 1869.

Flour, Extra, ₱ bbl	$6 00	@	$5 50
Do. Superfine	4 00	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 10	@	1 55
Oats, ₱ 100 lbs	1 15	@	1 45
Barley, ₱ 100 lbs	90	@	1 15
Beans, ₱ 100 lbs	2 50	@	3 50
Potatoes, ₱ 100 lbs	75	@	1 00
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	—	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	6
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18½	@	19
Do. Rio	18½	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Overland Butter	30	@	42½
Ranch Butter, ₱ lb	50	@	60
Isthmus Butter, ₱ lb	23	@	40
Cheese, California, ₱ lb	15	@	19
Eggs, ₱ dozen	45	@	55
Lard, ₱ lb	15	@	16
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	40	@	50
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	40	@	60
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	60	@	70
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	22	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	—
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	25	@	30
Soap, Pale and C. D	—	@	12
Soap, Castile, ₱ lb	—	@	20

Overland Monthly for December.

Table of coutouts: In Lava Land; In and Around Astoria; Expectation; Quicksilver, and its Home; Legend of San Juan de los Lagos; Down among the Dead Letters; Nevada; Cariboo; The King of Clear Lake; Those Americans; Tea Leaves; Minna's Betrothal; For Three Weeks; Old Lamps for New; Her Letter; The Idyl of Red Gulch; Etc.; Current Literature.

The descriptive and "valuable" articles, however interesting in subject and free in execution, are apt to be skipped, sometimes, in certain moods when we would relax ourselves to the beguilements only of lighter fancies, of sentiment, humor, and the enjoyment of the simpler manifestations of the heart. In this number there are more stories than usual. Down at the bottom of the list is the simplest told and most effective, because the least elaborated in style, of them all,—"The Idyl of Red Gulch." But while it is natural and brimming with the true story-teller's humor and genius, there is conspicuous the rawness—perhaps we should say coarseness—of stories as they are told around the camp-fire. Yet there is a moral to redeem it, in the abandoned woman's solicitude for the bringing up of her son,—did not the terse, playful sentences of Saxon vigor and rudeness already suffice to make us overlook the behavior of ignoble characters. "In Lava Land,"—the first article—is by a pleasing artist in words. A Mexican legend is that of the building of the church of San Juan de los Gatos, by the aid of an irreverent giant's hands.

THE GENESEE FLOUR MILL, on Gold street, in this city, so frequently damaged by fire, is again in operation. Its apparatus for cleansing the grain from smut, separating the barley and oats from the wheat, the bran from the flour, and assorting its various grades, are beautiful and complete in every department. The consequence is that no finer flour is produced anywhere. The capacity of mill is 400 barrels per day of twenty-four hours. The machinery is run by one of Booth & Co's 85-horse engines.

PROF. THEOBALD'S lecture on Wednesday evening, upon Pope Pius IX and the Ecumenical Council to be held at Rome, Dec. 8th, 1869, was listened to with interest.

KOOPMANSCHAP says there are 3,000 employed Chinese in California. Chinamen, it has been noticed, do not usually remain unemployed long.

FRIENDLY ASSISTANCE.—Those who learn the value of our paper by reading it, will confer a favor by informing those who should become its patrons of the superiority of the PRESS as a journal for reading and advertising.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Tarshish.—*Miner*, Nov. 13th: The lower tnunel is now over 100 feet long, and from 15 to 20 feet is being added weekly. Four men were taking out ore from the upper works on Tuesday, and some very good ore has been placed on the dump this week; 40 or 50 sacks of it the soft or pocket ore. Single-hand drills are used.

Leviathan.—We saw in the hands of Mr. Mullan, some Leviathan ore which he had partially smelted in a smith's forge, showing globules of copper all over them. Mr. M. thinks this ore may be smelted on the ground. The machinery for the mine has arrived.

Noble and Hill.—*Chronicle*, 14th: After a lapse of several years, work will be resumed on this claim next Monday.

AMADOR COUNTY.

Kennedy.—*Dispatch*, Nov. 20th: The Kennedy quartz mill was attached by its creditors last Friday, in consequence of which all work at the mine has been temporarily suspended. We understand that arrangements are being made by which work will he resumed in a few days.

CALAVERAS COUNTY.

Mining Items.—Messrs. Peters, Champion & Co. are working the Union shaft claim with success. It has the position of the best gravel mine in the district. The claim is now fitted up for winter working, large sheds having been erected over the shafts....Shaw is piping away at his bank with the best results. He has one of the best hydraulic claims in the county. The pay is uniformly good....Brackett & Co. are still drifting in search of the lead which they lost. The work is slow, as the cement is hard enough to require blasting.....At the Golden Gate claim they are taking out gravel at a rapid rate, and the quality is better than heretolore....Paul & Co. are still driving their gangway with prospects as bright as ever.

INYO COUNTY.

Lone Pine.—Los Angeles *News*, Nov. 20: Yesterday Mr. John Gray arrived in town with 142 bars of argentiferous lead from Lone Pine, and a box of rich specimens for one of the mine owners now in San Francisco, who is about going East.

LOS ANGELES COUNTY.

Good Showing.—*News*, 13th: The Eureka mine, Soledad, reports 140 ounces of gold, the proceeds of eight days' run.

More Silver.—*News*, 20th: Yesterday a prospector brought to the *News* office a magnificent specimen of silver-bearing rock from a ledge which he claims to have discovered in the Coast Range, some 65 miles from this city. The silver in the rock is plainly visible to the naked eye.

Rich Ore.—Yesterday a 75-pound specimen of rich argentiferous lead was brought to us. It is from the Comet mine, in Yellow Pine district. The supply of similar ore is apparently inexhaustible. The specimen would probably assay 90 per cent. of lead and silver. One of the partners is now in San Francisco, with a ton or two of the ore, for assay. Smelting works are to be erected immediately.

MARIPOSA COUNTY.

Mariposa Mill.—*Gazette*, 19th: The company's quartz mill seems to be progressing in its work with enlivening results. The resumption of the "wet process" in crushing, proves very satisfactory; the rock now being taken out is remunerative, and the prospect continues to be excellent.

MONO COUNTY.

The Dunderberg.—Carson *Appeal*, Nov. 14th: We are informed by persons who have thoroughly examined this mine, that it shows a large body of very rich ore. Situated on the eastern slope, with an inexhaustive supply of timber near, and an abundance of water, the Dunderberg will add largely to the product of the mines on this side of the mountains.

NEVADA COUNTY.

Empire Mine.—Grass Valley *Union*, 17th: The ledge is large in the main shaft, and increases in the Rush and Laton ground. The miners are taking out the ore faster than the thirty-stamp mill can crush it. Capt. Lee contemplates employing the Orleans mill, to help crush the ore. The rock coming out in such profusion is very rich.

Hope Gravel Mine.—The company is now taking out fine-looking gravel, and undoubtedly has the regular old river lead. Unless some unforseen accident happens, the Hope will henceforth be taking in instead of paying out coin.

McClellan Mine.—Same of 20th: Thursday last a blast disclosed a portion of the ledge which shows rich. The ledge has always been heavy in metal, but until Thursday no free gold had been found. The ledge is twenty inches thick.

Discontinued.—*National*, 16th: Jousen & Co. have discontinued work on ths Bavaria ledge, Rush creek, until next spring, on account of water. They are down 50 feet, and the rock shows well in gold and sulphurets. In the bottom of the shaft they have two ledges, one 18 inches in thickness, the other one foot.

North Star.—Same of 17th: The water has been reduced to the eighth level, and within a day or two the mine will be entirely free. Ore is being taken from the 6th and 7th levels, which will yield from $30 to $50 per ton.

The Ophir.—19th: This mine, between the Empire and Heuston Hill, is owned by the Empire Co. An incline shaft has been run to the depth of 300 feet on the ledge, which is from six inches to a foot in thickness. In the first level, ore has been taken out, which will run $30 to $40 per ton. They are now going to start a new level at the bottom of the incline. Some choice specimens were taken out on Wednesday.

Union Hill.—The only company at work is the "Union Hill," which is taking out 150 tons of ore per month. The ledge is four to ten feet in thickness. They have a great deal of water to contend with. The ore looks very fair.

Hydraulicing.—*Gazette*, 17th: But a small amount of water is running in the ditches in the lower part of the county yet. The South Yuba Canal Company are running 2,000 inches to Dutch Flat, and 1,600 inches to Omega. It needs heavier rains before miners can commence operations generally throughout the county.

Lindsey.—This mine is at the mouth of Fall creek, on the South Yuba. The ledge is fifteen feet in width, and for some months the owners have been crushing the rock in their five-stamp water mill, and doing well.

New Quartz Mill.—We learn that the mill erected by Van Dusen and others on the Illinois ledge, above Washington, was started up on Wednesday. The mill has five stamps and is run by water power. The ledge is of good size, and so situated that the rock can be easily delivered at the mill. It yields five dollars a ton, and can be worked with profit to the owners.

Illinois.—*Transcript*, 16th: The Illinois mine, above Cañon creek, on the Yuba, is owned by Thomas & Co. The ledge is from twenty inches to three feet thick, and the rock shows considerable free gold. The Co. have put up a five-stamp mill, which was started for trial last week, and worked satisfactorily.

Mount Auburn.—This ledge, owned by Holbrook, on Reagon Flat, has been opened at three places, to the depth of 25 feet, and is very rich. We saw specimens in the pile in which free gold could be seen all through. The ledge is large.

Wood's Ravine.—17th: Lutje & Swarts have completed a large flume, which is the outlet for tailings from the Knicker bocker, Gentry & Co's claims, the One Horse ground and other claims. Gentry & Co. are running a tunnel for opening their claims.

The Vigilance Mine and Steam Stamp Mill.—One of Wilson's patent steam stamp mills have been set up on the Vigilance on Reagon Flat, and the battery was set in motion on Saturday for the first time. The battery consists of two stamps weighing 650 pounds each—dropping 200 times per minute. The mill will be completed this week. The hoisting and pumping is done by a twenty-four horse power engine. The incline is down 225 feet, where they have a ledge from four to seven feet in thickness, of fine looking rock. They have out now 160 tons, and it is estimated that the two stamps will crush from 20 to 24 tons every 24 hours.

SIERRA COUNTY.

Suspended.—*Messenger*, Nov. 20: Work has been suspended at the Keystone mill, owing to the trouble of keeping the workings free from water, the pumping machinery not being powerful enough. The Co. has been running a tunnel to tap the ledge low down; but it will take some time yet to complete the work.

SISKIYOU COUNTY.

Quartz on Humbug.—Yreka *Union*, 13th: Lash & Co. still continue operations on the Eliza ledge with success. The ledge, at the point where their lowest tunnel strikes it, is five feet thick and of excellent quality. At present the company labors under a disadvantage, on account of the distance from the ledge to the mill and the necessity of packing their quartz on mules. We believe it is the purpose to remove the mill in the spring to the vicinity of the ledge.

TRINITY COUNTY.

Weaver Basin.—Trinity *Journal*, 13th: The claims in Weaver basin are all ready for water. A wet season will result in a large yield of gold, the claims being in a condition to be worked to the best advantage.

Flume.—R. N. Davidson, Supt. of the Fluming Co., informs us that the flume is now secured for the winter. There are 81 boxes laid down. These are 16 feet wide, and can be boarded 10 feet high on the sides if needed. The water has been turned in. The Co. are repairing their Brown's creek ditch, leading water to Mahie's Flat. All the old flumes along the ditch are being replaced.

The Rain.—Enough water fell to raise the river and drive out those engaged in mining in its bed; but miners generally have not been benefitted.

Valuable Claim.—Carson & Osgood, after years of hard work, have been richly rewarded. Four thousand dollars in coin has been refused for one-half interest in the diggings.

Quartz.—A gentlemau well informed in such matters has been prospecting the quartz in Weaver Basin, and gives it as his opinion that there is a mineral belt ranging through the county that is capable of easy development.

YUBA COUNTY.

Oregon Hill.—Cor. of Marysville *Appeal*, Nov. 20: The Castle Bar Co. has suffered heavily in the destruction of its works by the freshet on the Yuba. The Templar Quartz, with splendid machinery, is standing idle, for want of capital and experienced miners to make it pay. The ledge has always paid pretty well. Its shares cannot now be bought for less than $2.50 per foot. The locality resembles Grass Valley in its croppings. Experienced quartz men from Grass Valley are here, prospecting the hills; and one of them has found a good ledge. At Dobbins ranch there is an eight-stamp mill, where quartz from Camptonville yielded $50 to the ton. The miners here number about 25, and they are busy getting their flumes and ditches in order for winter. Ditches and water are needed.

Arizona.

Constantia Mine.—Prescott *Miner*, Nov. 6th: Judge Cartter, of La Paz, the other day exhibited ore from a gold-bearing lode named the Constantia, which made our eyes water. The mine is 13 miles this side of La Paz, convenient to wood and water. It belongs to an incorporated company, who are negotiating for a 10-stamp mill. Thousands of tons of ore are in sight.

Dry Diggings.—Some 50 or 60 miners are at work back of La Paz, making from $3 to $30 per day, by dry washing process. Judges Cartter and Peavis tell us of seeing recently at La Paz $1,500 worth of gold that was taken out of the diggings in one week. Pieces weighing $30 and $40 have frequently been found.

Walnut Grove.—C. G. Genung and P. Smith are now ready to start their arastras on ore from the Sutler lode. Pete Smith found recently, near the Placeritas, a lode of gold-bearing ore richer by far than any yet discovered in the district. The placer miners at work in McCloud's old claim are making from $5 to $7 per day.

Lower Lynx Creek.—The miners at work at the old Mexicau camp are doing first rate. We saw some of the gold. It was coarse. They are working the bed of the creek, washing the dirt in rockers.

Rich Rock.—We saw, the other day, several pieces of as rich gold-bearing rock as we have ever laid eyes on. Every piece was chock full. The specimens were from the bottom of a 30 foot shaft in the Charter Oak lode, Hassayampa district. The vein is six feet thick; pay streak, three feet.

Panning.—Gov. Safford, while near the Chase mill the other day, came across some miners at work in a gulch, took a pan of dirt, washed it, and got about 75 cents worth of gold dust.

The Prospecting Parties.—We learn from Chas. Franklin that the Cooley party had returned to Phœnix. They prospected upper Salt river, but found no diggings. An immense quartz ledge was discovered in one of the banks. The specimens taken from it were rich in gold.

Colorado.

Mining Items.—Central City *Herald*, Nov. 3d: Woodbury & Norton's mill is running 23 stamps without intermission; 18 on Missouri ore from the Winders & Martin claim, and five on ore from the Ophir. Some repairs are going on in the Consolidated Gregory....The claim of Bennett, Wright & Co. is paying $15 per day to the man....Wm. P. Jones has one of Wilson's Steam Stamp Mills put up in the old Keith Co's mill in Black Hawk. He will start up on Monday.... The Plumb Bros. have got their new 15-stamp mill on Quartz Hill about ready to run. They will crush custom quartz....A fine body of ore has been struck in the Baker Mine, Argentine. It assays $900 per ton....Mr. Freeman is putting up a mill on North Clear Creek seven miles above Black Hawk. It will contain five stamps and five arastras. There will be extensive mining there next summer.... The Paul Jones lode in Virginia Cañon is yielding fair looking ore.

Quartz Hill.—Same of 10th: The Co's mill has stopped work to put in a new hoiler, etc. Waterman's mill, Eurska gulch, is to add five stamps, making 20.

Rising Sun Lode.—For eighteen months McNear, McGaskell & Slattery have worked with discouraging results. They did not, however, despair, and last week, 200 feet below the surface, struck a seven foot crevice containing rich pay....Shaw & Finley have a lead further west, which runs 14 oz. per cord.

Ophir.—A party of 11 men, who are working out pay due them from the Ophir Co., are taking out three cords of ore per week, which yields from seven to nine ounces per cord.

Prize Lead.—Mr Hayden's new engine and hoisting machinery are busily at work. The mine is now the best paying lead on the Prize Hill, and furnishes a large quantity of ore.

Polar Star Co.—The 24 stamps are running on California ore from the Stalker & Standley claim. Thirteen cords are run per week, with an average return of 150 ounces, or nearly twelve ounces of gold to the cord.

Dr. Hagan's Works.—*Register*, Nov. 11th: We called yesterday at these works in Mill City, and found the large furnace charged with 20 tons of ore from the Whale lode, the furnace being heated for the first time. If the Doctor succeeds in handling these, the worst ores in the county, a new era will dawn on that portion from Idaho to Empire. Stamp mills have been faithfully tried and failed.

The Tunnels.—Notes of Travel, Denver *News*, 17th: A year ago when Burleigh and Marshall began their tunnel, failure was predicted. Now, a tunnel excitement exist. Many other tunnels are being driven as fast as possible. "There can be no danger that the Georgetown mines, opened as they will be by tunnels, will ever become 'economically exhausted.' The ore will lay above the tunnels, from which levels will he run, and the rich minerals will be stoped down and delivered at the mouth of the tunnels at a cost trifling compared with deep mining by means of shafts. When these tunnels shall be driven for sufficient distances to strike the lodes at depths of 500 feet and upwards, the supply of ore which will he guaranteed will be so largely increased and the yield of bullion so great in proportion, that all our present operations will appear as nothing."

Terrible Mine.—"The first class ore is now being shipped to England. The last lot of 11 tons which was shipped to Newark, N. J., yielded a net profit of $7,584.64 currency of an average of $689.51 per ton over all expenses of mining, transportation and reduction. The average value of all the first-class ore which has been worked has been $700, on which the net profit has been not lese than $550 per ton. No second class ore is now being reduced; but last summer Mr. Stewart worked 46 tons, the assay value of which was $282.50 per ton. Of this amount 70 per cent. was saved, making the yield $197.75 per ton. The profit was not far from $100 currency, per ton."

Briggs.—The old stamps in the mill are being replaced by new ones. Twenty-five are now in operation, and 25 more will be ready to run in a few weeks. The mill formely contained 50 stamps, weighing 650 pounds, and dropping 22 times per minute. With this mill they crushed 36 cords, or 252 tons, per week. The 25 new stamps are doing the same work done by the old 50, and when the entire 50 new ones are put in operation the capacity of the mill will he doubled.

Mills.—A list is given of 29 mills, with a total of 624 stamps, crushing a total of 421 cords of ore per week. Estimating seven tons to a cord, this makes 2,947 tons crushed per week. There are some six mills not included in the list, which would make the total about 700 stamps and 8,250 tons per week.

REDUCTION WORKS OF HUEPEDEN & Co. The total amount of ore worked from January 1st to October 23d, was 506 tons, which yielded a total of $58,215.92 coin, or $72,769.90 currency. This is an average of $115.05 coin, or $143.81 currency per ton. Now this is only 80 per cent. of the value of the ore. When it is remembered that these are our second class ores, the fact will appear remarkable.

Idaho.

MINING ITEMS.—*Avalanche*, Nov. 13th: The Ida Elmore and Golden Chariot continue to furnish the usual quantity of rich ore. The recent development in the Poorman proves to be a permanent thing; the lead is widening and the quality of the ore is getting better. The Baxter, which has been lying idle, is now being worked, and indications are favorable. We saw a specimen of ore this week, the finest we have seen in camp, taken from the bottom of the shaft, which is over 230 feet deep. Reports from the Red Jacket, Peck & Porter, Allison and Potosi, are also favorable. The Twilight, at Flint, now being worked by contract, by Mr. Clark, is turning out well.

THE BAXTER.—*Ware*, 18th: The specimen mentioned last week appears to be only a forerunner of what was to come. The mine has yielded a constant supply of superior ore ever since. One piece, now in Herman & Co's bank, is perfectly dazzling with rolls of bright ruby silver standing out in bold relief from the surface of the rock. O. S. Hazard, owner of the mine, is preparing to commence crushing in a few days.

LOON CREEK.—Helena *Gazette*, 11th: A private letter from Loon Creek, pronounces it a "hilk." The ground is claimed for 2½ miles. Over 400 men are at the camp. Claims rate from nothing to $6,000. There is very little buying or selling. The largest nugget yet found weighs seven ounces.

Mexico.

SONORA.—San Diego *Union*, 11th: A new mining excitement has started up, occasioned by the discovery of rich placer diggings in Sonora. The particulars reached Tucson two weeks since, accompanied by an invitation from an officer in the Mexican army to all Americans who wish to go hither from Tucson, to come along and go to work, and he will furnish them a military guard to protect them from the Indians. Eight of our citizens left with provisions, etc., to test the value of the report.

Montana.

PARK LODE.—Helena *Gazette*, Nov. 11th: Judge Turnley informs us that a crevice of eight feet has been struck; the rock is rich, and eight miners can keep the mill running. Mr. Whitlatch had formed a company of capitalists in the East to work and develop his lodes in Grizzly and the Owyhee Park.

GOOD.—We hear good reports from Confederate gulch. Many of the claims below Diamond City have been thoroughly tested. As much as $400 to the set of timbers, of coarse gold, is the average run.

QUARTZ.—We learn that 400 men are at work on the quartz lodes at Missoula. The prospect is very flattering.

PHILIPSBURG.—Cor. of the *Gazette:* "Property that six months ago could have been bought for the value of the quartz in sight, could not to-day be purchased for 100 per cent. advance. It is said that the St. L. & M. M. Co's mill has been leased, or in other words, that the offer of the California Co. is accepted, awaiting the approval of S. T. Hauser only. Also that the machinery will be put in running order immediately. About 900 tons of quartz lies subject to their order, and as many thousand can be furnished at the shortest notice. They have sent forward an experienced amalgamator from the French mill, Nevada. The Cole Saunders Co. are progressing finely with their new works on Camp creek."

NEVADA DISTRICT.—The Virginia *Capital Times*, Nov. 15th, says: Two drain ditches are being constructed, which will cost, in the aggregate, $4,000, and, when finished, will enable the owners to throw into the channels of commerce at least half a million of dollars. This statement is based on facts and figures.

ALDER GULCH YIELD.—It has been computed that the Alder Gulch for the year ending Nov. 1, 1869, gives a total of $1,000,000. These figures, had there been sufficient water, would assuredly have been quadrupled.

Nevada.

COPE DISTRICT.

COPE MILL.—Elko *Independent*, 17th: The new mill for Cope from San Francisco has reached this place, and is being loaded on teams for Mountain City. The mill is small, but complete.

RICH STRIKE.—News reached us last night that a surprisingly rich strike was made on Sunday in the Mountain City mine. Feet are worth $50.

FINE ORE.—On Monday we saw a specimen from the Mountain City mine, weighing nearly 50 pounds, which was literally a mass of horn silver.

MOUNTAIN CITY.—Letter to the abovenamed journal: The Argenta Co. are prosecuting their work with success. Several tons of first class ore have been shipped below. In the Mountain City ledge a large force of men are employed. This mine is evidently the mine of the district. During the past week 15 tons of first and second class rock have been taken out, besides a large amount of inferior grade. Work is progressing on the Columbus ledge, Grasshopper Gulch, one mile from town; also on the Crescent, situated about a mile from town. About 50 tons of ore have been taken from these claims and sacked. The Nappitandi ledge, near the Mountain City, is said to be the largest in the district. The Sunny Hill mine is creating quite an excitement. Assays from the Bruno ledge, in Bruno District, show $384 in silver and $12 in gold per ton. The Drew & Atchison mill is almost completed. Sellers, Merritt & Co. have made arrangements for hauling rock from the principal mines to the mill, and at present have one four-horse team hauling from the Hamilton mine, one from the Mountain City, one from the Belle of the West; and on Monday they commence hauling from the Grey Silver and various other ledges. There are now about 200 tons of rock delivered at the mill, and from 30 to 40 tons arriving daily.

WYOMING.—It is said that the smallest assay ever made from ore in this district was $384.20 in silver, and $12 in gold to the ton. The ledges thus far discovered are mostly in Silver Mountain, which is back of Bruno City, on Crystal Creek, a tributary of the Owyhee.

HUMBOLDT.

GOLD RUN DISTRICT.—*Register*, Nov. 20: The argentiferous galena ores of this district are attracting a great deal of attention in San Francisco. Several new companies have commenced developing the most promising leads, and are busily engaged in preparing for winter. The hoisting apparatus on the Cumberland shaft is completed, and the Co. is extracting ore from their drifts. R. C. Chambers has purchased the Register mine, and is now erecting comfortable winter quarters.

BATTLE MOUNTAIN.—Letters to *Register:* The Avalanche has been opened within a few weeks. At a depth of 20 feet, it shows a ledge 16 feet in width, of solid mineral, and well defined walls. The ore is argentiferous galena, and yields $280 per ton in silver, and 82 per cent. galena. A one-ninth interest was sold a few days ago for $2,000, the party retaining his interest in the ore on the dump. The Shiloh, owned by McCann, Way & Co., located near the Avalanche, is thought to be even better. The ore is of the same quality as that of the Avalanche, yielding $290 per ton in silver and 84 per cent. galena. The Cherokee is a ledge recently discovered by Robert Smith, a short distance from town. The Excelsior, owned by Hughs & Co., is six feet wide, and bears chloride ore which will assay from $80 to $100 per ton. The Mammoth, owned by Dr. Everson, is 12 feet wide, and, like the Excelsior, bears chloride ore. The ledges in this district, are looking well.

PAHRANAGAT.

BULLION.—*Reveille*, Nov. 19th: Yesterday, Wilson, the General Agent of the Hiko Co., and Mr. Dawley, the Supt. of its reduction works, arrived with 22 bars of silver bullion, valued at about $25,000. It will be shipped overland to New York immediately. We were informed that the bullion is the product of 30 days' run of the 10-stamp mill. The ore was produced by the Illinois, the principal mine of the company. Our informant stated that the ore reduced at the mill ranged in value from $80 to $100 to the ton. The Illinois is said to be of large dimensions. Mr. Dawley says that assays of the entire width gave the average of $40 per ton. The mill is at Hiko, while the mines are at Silver cañon, ten miles distant. It is the object to change this if possible. For this purpose an artesian well has been commenced in Silver cañon, near the mines. The well has been bored already 150 feet.

REESE RIVER.

BULLION PRODUCED.—*Reveille*, 20th: During the fortnight ending this date there were produced at the mill of the Manhattan Co. 24,113 ounces of bullion.

MINERAL HILL.—C. McWilliams, in company with several Virginia City mining capitalists, is visiting Mineral Hill District with a view of erecting mills, if encouragement can be obtained from the owners. So says the *Independent*.

EUREKA DISTRICT.—*Reveille*, 15th: J. Bateman and Col. D. E. Buel have purchased six locations on Ruby Hill together with several mines in the vicinity. The price paid is $200,000. Six furnaces are to be erected. This district is bound to figure in the quartz market. The single furnace running, turns out about two tons of bullion every 24 hours.

WASHOE.

HALE & NORCROSS.—*Enterprise*, Nov. 21st: On the 1,100-foot level the cross-cut west of the shaft has penetrated the ore 26 feet, and has not as yet reached the west wall. Another has been run 50 feet farther north. The width of the ore in this is 28½ feet. Most excellent ore is exposed in each of these cross-cuts, but that in the one farthest north is superior. A drift was started yesterday from the northermost cross-cut, to be run in the center of the ore-body to the northern boundary of the mine. This is the most important development since 1865.

SAVAGE.—A body of excellent ore has been found, the extent of which has not been ascertained, on the seventh level in the main drift running southward, towards the line of the Hale & Norcross. They are now overhauling their old upper works preparatory to taking out the low grade ore near the top of the ledge. This will be shipped by railroad to Carson river for reduction. The works are all in good order and everything is going on smoothly. The main shaft is down eighty feet below the present lower level.

OPHIR.—The Co. have still 250 feet of water in their shaft. The new engine is in operation. Two hoisting tanks are kept in constant operation, but the pump is idle, as the plunger pump is out of order, and being under water, cannot be repaired until the water has been lowered below the point where the trouble exists. The water comes from the old mine, and when it is once bailed out, there is no doubt that the pump will keep the shaft drained.

OCCIDENTAL.—Quartz resembling that in the principal mines on the Comstock has been found in the lower tunnel. It is supposed that the edge of the ledge has been cut. The body of ore in the north end of the mine is found to be extensive. The usual quantity is being taken out.

BELCHER.—The usual amount of ore is being taken out from the old works. A small vein of quartz and pay ore has been struck on the 730-foot level. They are drifting and cross-cutting on the 850-foot level.

VIRGINIA CONSOLIDATED.—The shaft is down 420 feet, and the rock continues favorable with no increase in water. At the depth of 500 feet they will begin drifting.

SIERRA NEVADA.—The usual amount of ore is being taken from the surface workings, and drifting is going on below in fair quartz.

SUTRO MINE.—Work is about being resumed in this mine, on the north side of Cedar Hill. Although Mr. Sutro may have been the locator of the mine, we believe that at present he is not interested in it.

CALEDONIA.—The new shaft is down 100 feet and drifting for the first level has commenced. Some fine looking quartz has already been encountered.

IMPERIAL-EMPIRE.—They are a good deal troubled with water, but are making fair progress, the shaft being down 1,182 feet. Drifting is progressing on the lower level.

YELLOW JACKET.—Last Thursday they made their first shipment of low grade ore by railroad to their mill at Empire City, on Carson river. It consists of seven car loads from the 700-foot level of the old north works and will probably mill $18 per ton.

SUTRO TUNNEL.—The small tunnel or "header" (six feet square) was in 173 feet last evening. During the past week they have made seven feet every 24 hours.

SEGREGATED BELCHER.—A deposit of ore assaying $200 has been found in the 500-foot level.

GOULD & CURRY.—Drifting is still going on in the seventh level, and the usual amount of ore is being extracted from the old works.

KENTUCK.—The good yield is continued, and a dividend of $10 per share was disbursed day before yesterday.

CHOLLAR-POTOSI.—The new hoisting works will go into operation in a few days. From the old works they are taking out 125 tons per day.

FIRST ORE SHIPPED.—Gold Hill *News*, 19th: The lot of ore from the Yellow Jacket shipped over the railroad yesterday to the mill on Carson river was from the 700-foot level of the old north mine, and dumped directly into the cars, the railroad passing within a few feet of the shaft. It is ore which heretofore was considered too poor to work.

DAYTON BULLION.—Same of 22d: The Dayton stage, brought up 1,448 pounds of crude bullion this morning. It was from the following mills. Birdsall, 1,048 pounds; Rock Point, 300 pounds; Reservoir, 100 pounds.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, 20th: The work goes bravely on. The splendid weather is being taken advantage of to haul from the mine dumps every pound of ore that the supply of horse flesh is equal to. The mine product of Treasure Hill is now sufficient to sustain a greater population than the three towns have. But times are dull. The bullion is turned out at so light an expense for mining and hauling that the gross product does not encounter sufficient friction—as by wages of men—to be much advantage to general business. Capitalists hire ten men to work a mine which on the Comstock would require 100 men. The bullion is shipped to the cars at a cost probably 60 per cent. less than it could be from the Comstock.

BULLION.—*News*, 20th: Total for the week $57,331. The price for crushing is now $16 per ton. Hence the reduced average yield of the ore, for now the mine superintendents work it without assorting.

MILLS AND FURNACES.—*News:* A number of additional small furnaces are going up, and we hear of arrangements under discussion for working on a larger scale even than the White Pine Smelting Works at Swansea. These works are turning out about six tons of bullion daily. They are running on ore from five or six different mines. The assay value of the bullion is about $75 in silver to the ton. D. A. Spraker, of Shermantown, has just broke ground for the erection of a set of works in that place to consist of two large furnaces, each four feet in the clear. *Empire* says: The White Pine Smelting Co. shipped last week 255 bars of bullion, weighing 22,345 pounds. A gentleman from Freiberg is constructing an improved furnace in this city, which will be ready to fire up next week. Work on the Chicago mill is progressing finely. Most of the framework is up, and the workmen are preparing for the machinery, the last of which is expected from Elko in a few days.

ITEMS.—*News*, 20th: Wm. Latimer has arrived from New York to introduce the Diamond drill. A new era in prospecting is promised us....Aurora Consolidated ships 80 tons ore to mill daily. Ore at 114 feet depth improves greatly....Work on Constitution progresses finely....Domingo ships 10 tons first class ore daily....Empress Josephine, Base Range, has a thin but rich vein, worth $100 per ton silver, smelted....Imperial gives three or four tons same kind. Gil. Dorland does not smelt it, but sells it on the dump at $25. ....Pritchard has a 25-ft. shaft....Little Giant mill constantly running on ore from the Pogonip & Othello. Has turned out $5,000 in bullion this week....Sierra Pasco ore works $86....Truckee is looking better. Twenty men this week have taken out this week 15 tons first class ore, and 40 tons second class. Last lot worked gave $136 per ton, .996 fine....*Empire*, 21st: Original Hidden Treasure looks better than ever. Force increased to 40 men. A new shaft has been started to tap the ledge 50 ft. down.

New Mexico.

MINING ITEMS.—Colfax *Telegraph*, Nov. 13: Maxwell's new 15-stamp mill, on ore from the Montezuma lode, nets $1,000 per day....The tramway from the Montezuma to Maxwell's mill, will be completed this week, ready for the wire rope, which is expected next week, with fifteen additional stamps....At Orleans Flat, Mr. Pease, with a rocker, is taking out $20 per day. ....The Michigan Co. are opening a new cut on Michigan Gulch. The same company are at work on Grouse Gulch, with success.

Oregon.

CANON CITY.—Dalles *Mountaineer*, Nov. 9th: Mining has not been unprofitable this summer. The lack of water has prevented some of the mines from being worked; but energy has been displayed in opening up claims, which have amply repaid. The Chinamen have been working claims on Cañon creek, hitherto considered worthless, and have sent considerable money into circulation. Parkers & Winters' claim at Parkersville, in the Burnt River District, cleaned up $17,000 in a two weeks' run.

Mining and Scientific Press.

W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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San Francisco:

Saturday Morning, Nov. 27, 1869.

Notices to Correspondents.

"Rebellious Ores and New Processes," by C. H. Aaron, in type.

"Mining Notes from Placer County" are unavoidably postponed until next week; also some notes on the Eureka mine, Grass Valley.

Icon will appear next week.

T. J. C., Central, Col.—The Hagan furnace is not in operation here.

The Gold Hill Fire Still Burning.

The terrible and fatal fire which broke out in the Gold Hill mines on the 7th of April last, and which resulted in the destruction of a large number of lives, is still smouldering. After it had been reduced to close quarters, it was carefully walled in, and work was again started in different directions around it. It was thought to have been extinguished long ago; but such, it appears, is not the case, for a few days since some miners working between the 600 and 700-foot levels of the Kentuck mine suddenly picked through into a space where there was plenty of fire, finding large brands of it. The place was at once closed up again. Being as far as possible shut in and kept from the encouragement of atmospheric air, the fire merely smoulders, but it is there, nevertheless, and may keep on burning for many months to come. It can do no particular harm, however, as it is merely burning out the old timbering where the mine has been worked out.

Winter on the Railroad.—Both the Union and Central Pacific Railroad Managers affirm their belief that no material hindrances from snow on the tracks need be apprehended in the future. The experience of last winter, and the preparations which that experience has suggested, they hold, will prove ample for all emergencies.

Gone East.—Mark L. Winn, inventor of the shampooing apparatus recently illustrated in this paper, has gone East by rail, where he will make arrangements to have his apparatus manufactured. He will return shortly with a sufficient number of his machines to supply this market.

The Washoe Stock Board.

Again there is plenty of life and much to do between brokers, speculators, and owners in mining stocks. These words—"mining stocks"—refer with us always to Washoe. The quotations from the Board contain as a rule only the names of the Virginia and Gold Hill mines—a fact not by any means going to show that other districts in California or Nevada are not paying equally honest dividends in the sought for metals.

An *active* stockboard is, of course, the direct result and evidence of activity in the mines whose stocks are dealt in. The kind of activity has less to do with quantities of rock mined or milled, than with sudden changes in prospects of doing better or worse. Therefore, we may find some of the best managed and best producing, as well as best paying mines, little quoted or referred to in the stock columns.

The every-day trading and "transactions" are of no great general importance. The mining stock-dealers are organized into something like a great game, which seems to interest them very much, for they have their money—all of it as likely as not—staked, upon their own peculiar card, or trick. The latter consists in possessing especially clear, or exclusive knowledge: 1. Touching the situation or management, or new development of the mine in question, bearing upon a yield of million above the expenses. 2. The existence, or probabilities, or possibilities of new combinations in the company's stockholders, whereby, 3. The operations of mining or milling may be differently controlled, in such a manner as to give the parties controlling the opportunity to derive subordinate extraneous advantages and profits out of the *expense* account, in the way of—the thousand and one methods that are so easily practiced.

This amusement is even more respectable than playing at two bit euchre in respectable families to late and sometimes early hours. The rule of success is, as in the latter case, also a hiding of your own hand; a reading of your neighbor's hand by his movements, and by seeing through his intentions to deceive, yourself in the issue deceiving and euchreing him; but quite as often (when sufficiently tempted) the rule is to deceive the individuals on whose behalf you are playing, a matter at the same time very easily done, and covered up, in such a mysterious, sharking game, as speculative dealing in mining stocks.

The late rise in Washoe stocks is amusingly transparent and curious in its effects upon the sharp and intelligent faces of prim and seedy-looking men who are daily seen to congregate at the corner of Montgomery and California streets. These dealers, and agents, embody a very large share of the intelligence of our mining interest. They are doing much stirring, which works toward the development of our new unworked territories of untold wealth. The spirit of the community evidently commends and sustains them. They certainly do right in profiting as much by their transactions as they can, for who would not nab a fortune in a day? Persons who are, or wish to be engaged in legitimate mining, need not be interfered with; for that is quite a different trade.

The foundation for the late "improvement in mining stocks," is the discovery of some new bodies of ore in the central part of the Comstock vein, principally in the Hale & Norcross mine. This is about the point where the chimney and stockwork character of the northern row of Comstock mines begins to change into the sheet deposits, characteristic of the Gold Hill portion of the vein.

The latter is the true vein character, to be depended upon for regular and continuous mining; it contains a lower average of metal, but worked in quantity may yield quite as largely, and more surely, than even the chimney deposits. The new rich deposit struck in the cross cuttings of the Hale & Norcross is, according to the Secretary of the company, whom we have questioned on the subject, "different from anything that they have ever had," containing, we are told, a great deal of wire silver. But whether it is of the chimney or of the sheet character; whether the Comstock lode and ore as now developed in depth, promises to be uniform or of such a character as to admit of the formation of any further sound practical deductions relative to the future dividend value of "feet" in that region, nothing transpires to throw any additional light. "A rich body of ore" struck, is, of itself, an old story.

The Awards at the Chilian International Exhibition.

English manufacturing is so largely dependent upon its foreign markets that much more attention was given to the conquest of the Chilian field by English agricultural manufacturers at the Santiago exhibition of last April, than by those of the American Atlantic States, whose ample market is to the rear of them. Nevertheless, there were some good articles from the Eastern States, as specimens of the American method. The American steam thrashing machines on the Pitt system, being very light and cheap,—made of wood wherever possible,—found many patrons, but received only the second prize. The American wood and steel plow has hitherto been the standard in Chili; it was the cheapest plow in the market; yet the prize went to an English plow, on its merits for lightness of draught, durability, and quality of work done.

The firm of Ransomes, Sims & Head took the grand gold medal and $800 prize for the best general collection of agricultural machinery; also first prizes for steam thrashing machine, portable steam engine, and plow; while Hornsby & Son (English) came out first on reapers and drills. On plows and harrows in general, J. & F. Howard's were the best. Don Santiago Prado took the $500 prize and gold medal for horses and cattle. California does not seem to be represented on the prize list.

The Darien Ship Canal.—The telegraph of Monday says a Government steamer has been detailed to proceed to Panama, to assist in the survey of the proposed ship canal across the Isthmus. It is stated that a treaty has been received giving to the U. S. Government sole control over said work. This looks very much like business. The United States as well Europe must have a new and shorter ocean way to the Indies. It is especially opportune that the telegraphic dispatch noted above should appear simultaneously with the telegram announcing the successful opening of the Suez canal.

Delegation from Lick's Orchard. Five boxes of mammoth apples, peare, and quince, accompanied with the proper credentials as representing a very populous community of like stripe and flavor, reached our office a few days ago from the orchard of James Lick, flourishing at Santa Clara. They have been tasted, and are pronounced fit representatives of Santa Clara. The "Spitzenbergs" were exceedingly large and fair, and not excelled by any apples we have ever tasted.

For Amador, Calaveras and Tuolumne Counties.—Wm. H. Murray, our traveling agent, will soon visit the above named counties, offering persons a convenient opportunity to subscribe and pay for the Press.

The Official List of Premiums awarded at the recent exhibition of the Mechanics' Institute is published on pages 346 and 347. It is the first full report of awards published.

Profits and Losses of Two Methods of Mining.

Of late it has been common to hear the remark (a true one) that "mining stocks were never so low as they are now, nor anything like it." The lowest ebb and the subsequent rise is shown in the following table taken from the *Bulletin's* commercial column of November 12th:

	Sept. 30.	Oct. 30.	Adv.	Dec.
Alpha.....per share.	$10	$14	$4	—
Belcher.....	13	14	1	—
Bullion.....	16	16	—	—
Chollar-Potosi.....	14	17	3	—
Confidence.....	30	25	—	$5
Crown Point.....	14	12	—	2
Empire Mill.....	15	18	3	—
Gould & Curry.....	67	77	10	—
Hale & Norcross.....	114	139	25	—
Imperial.....	29	35	6	—
Kentuck.....	174	165	—	9
Occidental.....	9	13	4	—
Ophir.....	12	16	4	—
Overman.....	70	122	52	—
Savage.....	35	45	10	—
Sierra Nevada.....	7	13	6	—
Yellow Jacket.....	33	41	8	—

What Mount Davidsone of bullion have the brokers bore extracted? A million and more. See what amounts of paper bullion, that nevertheless represent the same amount of precious metal in our stock-dealers' control—by the following exhibit of the profits of stock mining for the month of October. On the whole number of shares represented by the above companies severally, the gain in market value stands thus:

Alpha.....	$24,000	Occidental.....	$40,000
Belcher.....	10,400	Ophir.....	67,200
Chollar-Potosi....	84,000	Overman.....	166,400
Empire Mill.....	3,600	Savage.....	160,000
Gould & Curry....	48,000	Sierra Nevada....	90,000
Hale & Norcross...	200,000	Yellow Jacket.....	192,000
Imperial.....	24,000		
Aggregate appreciation.....			$1,109,600
Loss in Confidence.....			$17,800
Loss in Crown Point.....			24,000
Loss in Kentuck.....			18,000 59,800
Net appreciation in 17 descriptions.....			$1,059,800

This is more than the mines, or the army of miners with all their hard labor, have been able to bring forth to the surface in the same space of time. The profits are decidedly in favor of mining in the stock board, as a business, and going comfortably to the Lick to dinner, and to the California Theater of an evening.

But there is another feature of stock mining, which is worthy of incidental note. For the first ten months of the year the monthly loss and gain on the foregoing descriptions have been as annexed:

	Gain.	Loss.
January.....	$809,700	$122,640
February.....	322,000	427,980
March.....	406,480	733,000
April.....	1,446,380	278,800
May.....	1,470,400	522,900
June.....	106,120	2,374,500
July.....	69,560	1,255,000
August.....	68,000	1,209,540
September.....	12,500	1,544,960
October.....	1,109,600	49,800
Totals.....	$5,840,740	$8,519,120

Losses above gains, $2,678,380. These losses are likewise real losses to individual owners, often in cash. What is the cause of such losses? Of course, that the "mines are not yielding enough to keep up the stocks." Mining "don't pay," referring now, as a matter of course, to legitimate mining, for every one knows that stock mining in general pays well, the commissions at least, plus occasional handsome strikes. The losses go to the account of those who own in some of these mines that figure in the stock boards, and who do not make stock mining their special business.

Yet the Virginia mines have been producing, quietly and regularly, during October, and every preceding month of the year as during former months when stocks were deemed at high tide.

The Virginia *Enterprise* thus states the case: When the stockholders of San Francisco were driven by their business necessities to throw their Washoe stocks upon the market three months ago, the inference was that the bottom had fallen out of Nevada. The result was a panic, or little short of it, and immense losses for the time being to *those* who had faith enough to purchase and hold.

Mines certainly would not be worked—no more than a railroad could be run—if they were not paying somebody more than the money that is being put in. But there is one class to be excepted—the mines that are worked solely to trap fools in the stock market.

Observed Changes of Level on the Pacific Slope.

The "cataclasms" of the Bible and of theoretical geology—the astounding results of dynamic change exposed to view in the shape of upheaved mountains, Yosemite gorges, and ten thousand shapes now grand and beautiful,—evince a tendency to carry the thinking mind of man back to an age of terror, and to feed, if not create, superstition. In one sense, superstition is a virtue, for it is the laying of a sort of foundation for riper knowledge of nature around us, and of Him who created. Popular philosophy prefers to believe that everything has been "hove up." There are belemites found scattered over the surface, and sticking in the rocks in numbers, little bolts that do not belong to or look like any living created thing ever seen, —and which must have been the very arrows that were fired to and fro in those days of havoc, when the devils had it all to themselves in their own quarrelsome, infernal way.

Geology, embracing all the other sciences, and bearing most directly of all upon the destinies of man, loves to trace in things to be observed around us in the present, as far as possible, the same causes and operations that in the Creator's hands, gave to us the foundations of the earth to dwell upon. We need imagine nothing whatever. None of the original causes or operations have been suspended. We can even descend to, and witness with mortal eyes, the earth's internal fires, in the molten lake of the crater of Kilauea. We can read as easily and unerringly as we do the pages of a book, the successive formations that envelope the old plutonic rocks like the peelings of an onion, to our particular standpoint on the surface, where we are scraping the soil, or burrowing in the crevices for metals.

Reference has frequently been made to observed changes of level that are going on on this coast and elsewhere. An inch of change in a century is a mile in a little more than 50,000 years—a brief "day" in geology. While the eastern coasts of the North American continent are known to be sinking, and the western oscillating or rising, from Chili to British Columbia, there are to be noted with special care and exactness, local variations, or oscillations, periodical and regular or otherwise.

The student of the geological history of California may find something that is to the point and suggestive in the following communication stating a few facts, the purport of which in regard to our local geology need not be enlarged upon by us at present. Prof. Whitney's survey records the Cretaceous and Tertiary rocks, in the same region along the foothills, as a little out of level, dipping westwardly. Such facts have undoubtedly something to do with the formation of the auriferous gravel courses of the pliocene and post-pliocene rivers that once drained the golden western slope of the Sierra Nevada. Geographically, the line of alteration in level observed by our correspondent, is fixed by the summit of Mt. St. Helena in the Coast Range, and the Marysville Buttes; about N. E., and nearly at right angles to the coast line at this point:

FORBESTOWN, Butte Co., Nov. 8th.

DEAR SIR:—You will remember, when I was in San Francisco, in September, of my telling you that on the spot where I built my house some seven years since, one peak of the Marysville Buttes appeared to be higher (without reference to the exact altitude) than the summit of the Coast Range immediately beyond. On the fourth of September last, to my astonishment, the same peak of the Buttes, from the same spot, appeared to be on a level with the Coast Range, and I at the time called the attention of others to the fact. My brother, who is also certain that one peak of the Buttes was formerly above the summit of the Coast Range, on September 5th walked with me down the hill to a spot about seventy-five feet below the foundation of the house, before we could make the peak of the Buttes as much above the summit of the Coast Range as formerly. This afternoon—November 8th—I could distinctly see from my door the summit of the Coast Range *above* the highest peak of the Buttes. I have never done so before, and the change in level has been the subject of frequent observation and remark with me within the last two months. Moreover, I walked down the hill to the spot where I and my brother stood two months since, and the highest peak of the Buttes only appeared on a level with the summit of the Coast Range beyond, and a still further walk down the hill to a spot some seventy-five or a hundred feet lower, only made the highest peak appear as it did two months since, or as it did formerly at the house. I have never taken any observations with instruments to ascertain the exact amount of depression of the Buttes, or elevation of the Coast Range and Sierra Nevada, but am certain there has been an alteration in the level of the points named, which also appears to other observers. The altitude of the location of my house is about 2,300 feet—the distance to the Buttes about thirty-five miles on an air line—to the Coast Range, from 130 to 150 miles. Yours truly, F. A. HERRING.

Electricity and Crystallization of Metals.

Daniel Breed writes from Washington to the *American Artisan*, that John Corson has just got a patent for the making of iron of a superior fibrous structure by insulating it during the process of manufacture from electrical earth currents. He is an old California miner, and says he has observed that gold was "generated" in the tailings of worked-out mines, and that such generation or deposition was more abundant in gulches running east and west,—or parallel to the earth currents,—than in those running north and south,—or transverse to such currents. So he concluded that electricity was the cause of the crystallization of metals, and in 1867 received a patent for the use of electricity in crystallizing gold. He now proposes to insulate metals to prevent crystallization. He insulates the furnace, forges, anvils, rollers, and other machinery, and also the floors, tools, and all appliances where iron and steel are manufactured or stored; likewise railroad tracks, bridges, buildings, and all structures made of iron, in order to produce and preserve a superior fibrous condition.

Perhaps the occurrence of the gold in gulches running east and west could be accounted for in some other manner.

A PARK FOR SAN DIEGO.—San Diego wants a park, where its future overcrowded population can stroll at its leisure and get a breath of fresh air. An area of 1,480 acres has been set apart for that purpose, and yet the people complain that the grounds are too small! London and Paris are satisfied with 500 acres each; but San Diego, being about to become the terminus of a Continental railroad, is, of course, a city of large expectations, and should be gratified.

DEATH OF A CALIFORNIA INVENTOR.—Zenas Wheeler, late of this city, died in Melbourne, Australia, on the 15th of August last, at the age of 53 years. Mr. W. was a native of Maine, came to California in 1848, and soon after located in Grass Valley, Nevada county, where he was well known as a mechanical engineer. He was among the earliest of our inventors to introduce pan grinding into quartz mining, and his name has for the last six or eight years been prominently connected with this class of mining machinery.

SOME military gentlemen went over to Saucelito on the 18th inst. to try the Remington rifle for soldiery, with a view to getting the Governor and military authorities posted as to the effectiveness of some of the new improvements. The results were considered highly satisfactory. The representative of the invention was A. E. Crane.

New Books.

THE CANDY ELEPHANT and Other Stories for Children. By Clara E. Dolliver. Illustrated. 12mo; pp. 236. New York: Published by A. Roman & Co., 1870.

Miss Dolliver is a common-school teacher in San Francisco, and one of the class of young ladies who could afford to be "ugly," though we do not believe that she is anything of the kind. Woman are so strangely constituted, or mon's judgment is so perverted, that lines of character in their faces are usually considered, or *are* out of place. They were not made to wrinkle their sweet faces with thought, nor to do anything but sow, and cook, and nurse their babies; and between those three employments the young and handsome must, in a few years, be transformed into crooked-backed, spinally ailing, roasted, wriukled or shattered, *ugly*, oldish women. Such is the theory and the practice. But women can be out-door bodies, and can show character as well as men; and they do it in some of the best literary works of modern times. Miss Dolliver's book is a good specimen of a woman's writing. They have a way, of getting around all dullness, and will take you through regions of vivid coloring, giving you, in their own peculiar way, the pith of a volume in a few sentences. Women are "Frenchy" in their habits of presenting things—that is, the French, rather, are femiaine in their way of talking and writing. On certain subjects a woman's handling is superior, and far more attractive to the general reader, than a man's; and such subjects are those in the collection of stories before us, the first of which gives the title to the book. The "Candy Elephant" was the nickname of Miss Em's little brother Bobby, and the story tells most pleasingly all about the child getting lost in the rain on a Thanksgiving day, and being sought for and believed to be drowned by Em. and Mr. Heath (who afterwards marries Em). The boy, on a visit to Em's one day, strays away and does get drowned. She remembers Bobby's words when she found him on that Thanksgiving day: "Don't cry, Em."

The illustrations are very superior, as well as the printing. The stories are all Californian in tone and location; amongst them are several happily conceived fairy stories; and as a Thanksgiving and Christmas book, though intended for children, it is well worthy of the spare hours of older people. The price is $1.

OPTHALMIC SURGERY AND TREATMENT; with Advice on the Use and Abuse of Spectacles. By John Phillips. Chicago: Western News Co., 1869. Ill. 8vo; pp. 512. Received from and for sale by A. Roman & Co., San Francisco.

In the eye and its perceptions and capabilities as the chief organ of the soul, man approaches most nearly to the omniscience of the Creator. Spiritualists, and sickly people with unnatural longings, are not satisfied with natural perceptions, and would adopt other means of guidance, even in some of the most important matters of life, seeking to see and know without this intermediation. Let them arrive at the desired results in the natural and appointed way just as far as it will suffice—and that is a great deal farther than will Psychology, or Spiritualism in any form. The faculty of seeing is something wonderful, and noble, for it is superior to bodily sensation. It is the language of intelligence. What impalpabilities of soul and of the immortal enter into and play around the eyes!

A student of eye diseases as a specialty—a thorough student—at once becomes one of the most perfect examples of a benefactor that the whole range of human pursuits can afford. Quackery will not answer here.

But as oculists cannot be supported everywhere, the general practicing physician is often necessarily called upon to serve. This work is intended to give him all the aid of all the newest developments in eye surgery. It seems to cover the whole ground conscientiously. The price at Roman & Co's is $5.

MANUAL OF THE HAND LATHE: Comprising Concise Directions for Working Metals of all kinds, Ivory, Bone, and Precious Woods; Inlaying by Veneers, and various methods practiced to produce Elaborate Work with dispatch and at small expense. By Egbert P. Watson. Illustrated. 8vo; pp. 136. Henry Carey Baird, Philadelphia, 1869. Price $1.50; by mail free.

The author, one of the former editors of the *Scientific American*, presents this work as the result of his own experiences, having himself practiced turning with the enthusiam and love of an amateur. The tools and methods are well illustrated, and the style is very concise and clear. The hand lathe, or foot lathe, which means the same thing, is a universally useful machine, adapted to use in homes and families, by ladies as well as by gentlemen, out of work hours as well as in, for ornament quite as much as for useful purposes. Some of the most beautiful ornamental turning ever done, was by Miss Holtzapfel, and other German ladies use the lathe with great skill. It is a cheap and simple machine, that will save persons of mechanical taste many an item of expense. The whole ground of wood and iron turning is covered in Mr Watson's work. Publisher's price $1.50, by mail free.

THE PAINTER, GILDER, AND VARNISHER'S COMPANION: Containing Rules and Regulations in everything relating to the Arts and Painting, Gilding, Varnishing, Glass Staining, Graining, Marbling, Sign Writing, Gilding on Glass, and Coach Painting and Varnishing; Tests for the detection of Adulterations in Oil Colors etc.; and a statement of the diseases to which Painters are peculiarly liable, with remedies; and an Appendix, on Colors and Coloring, Drying, Modes and Operations, together with Chevreul's Principles of Harmony and Contrast of Colors. Henry Carey Baird, Industrial Publisher, No. 406 Walnut street, Philadelphia, 1869.

This very essential work—to every painter— has already been noticed by us. The publisher's price is $1.50, sent by mail free of postage.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING NOVEMBER 16th.

WOODEN PAVEMENT.—Phinehas Howard, San Francisco, assignor to J. S. Josselyn, W. B. Lake and B. F. Josselyn, same place.

PROCESS OF REDUCING REBELLIOUS ORES. A. I. Frick and J. B. Le Clerc, San Francisco.

FIELD HAY PRESS.—E. J. Marsters, Shaws Flat, Cal.

BEVERAGE.—Constantine Nessi, San Francisco.

CHAIN ELEVATOR AND BUCKET.—John A. Ball, Grass Valley, Cal.

GANG PLOW.—W. J. Boyce and Geo. W. Haines, Maine Prairie, Cal.

HARVESTER AND THRESHER.—W. G. Davis and Levi T. Davis, assignors to D. McCreary, J. B. Davis and L. T. Davis, McMinnville, Oregon.

WASHING MACHINE.—Herrmann Cramer, Sonora, Cal.

CABINET FOR LADIES.—J. Forbes, San Francisco.

PINS NOT MODERN.—A collection of twenty-five pins has recently been placed in the Louvre, Paris, which were found in the subterranean vaults of Thebes, and must have been made more than 3,000 years ago. They are very well made, and differ but little from those now in use. Ladies' hair pins have likewise been found under similar conditions, almost precisely like those which the ladies of the present day employ in fastening their hair.

RUSSIA LEATHER is called by the Russians themselves "jucteu." It is usually dyed red with aromatic saunder's-wood; and is especially valuable for its property of keeping free from mould, when exposed in damp situations, and in being proof against the attacks of insects. It even repels such annoyances by its odor. It is useful in preserving books, when employed as a portion of the binding material.

A FATAL EXPLOSION of the manufacturing works of the Giant Powder Co., located between St. Mary's College and the Industrial School, nearly five miles from the City Hall, San Francisco, exploded and buried last night killing two men and seriously injuring others, including six Chinamen.

A GOOD INVESTMENT.—The woolen mill at Marysville has declared 33⅓ per cent. and 100 per cent. stock dividends after two years of operations. Its capital stock was increased from $50,000 to $100,000.

RED DOG HAS GONE TO YOU BET.—Business houses, families, offices, everything. Red Dog is no more; in short, the "dog is dead."

Award of Premiums.

[*Official Revised List, Seventh Exhibition of the Mechanics' Institute—Furnished specially for the M. & S. Press.*]

MEDALS.

INSTITUTE MEDAL.

Pacific Rolling Mill Co.

INVENTOR'S MEDAL.

A. G. Waterhouse, rotary mechanical power.

GOLD MEDALS.

Kindleberger & Arnold, blind shade tenoning machine.
J. D. Arthur & Son, bent-axle gang plow.
California Powder Works, blasting, rifle and hunting powder.
A. S. Hallidie, patent suspension bridge.
J. S. Phillips, portable assaying machine.
San Francisco and Pacific Lead Pipe and Shot Works, pig lead, leadpipe, drop shot, etc.
Jouathan Kittredge, Californuia safes.
Pacific Saw Manufacturing Co., saws, pruning knives, reapiug machine sections, etc.
Elam & Howes, wooden ware.
Pacific Glass Works, assorted glassware.
San Jacinto Tin Co., samples of tin ore, pig tin, block tin and tin ware.
Pioneer Paper Mills, colored and other papers.
Black & Miller, hacks and top buggies.
Main & Winchester, display of harness.
Goodwin & Co., best average general display of furniture.
Strahle & Hughss, laurel palace and California woods.
Toby Rosenbal, oil paintings—Exile's Return and Joys and Sorrows of Spring.
P. Mezzarra, artistic merit in statuary of California manufacture.
George A. Brush, imitation laurel, walnut and oak.
Jacob Zech, square piano.
Capital Woolen Mills, blankets and flannels.
J. R. Nickerson, best displ ay of apples.
Thomas Varney, amalgamating pan.

SILVER MEDALS.

G. T. Pracy, steam engine governor.
Berry & Place, Blake's steam pump.
J. T. Ford, hook and eye machine.
Berry & Place, planing and matchiug machine.
C. F. Travis, French burr mill stones.
J. W. Sutton, rotation dynamometer.
Hawley & Co., Marsh's harvester.
George W. Taylor, steam quartz battery.
T. Locher, working model of steam plow.
San Francisco Cordage Co., samples of manilla cordage.
A. S. Hallidie & Co., wire rope and cord.
Liddle & Keading, California-manufactured breech and muzzle loading sbot guns and telescopic target rifles.
Asphaltoliu Pipe Co., asphaltoliu pipe.
E. N. Robinson, specimeus of roofing, slate and flagging.
John Roach, transit, theodolite and leveling instruments.
V. W. S. Parkhurst, Howe's staudard scales.
Folleau & Mabon, snrgical appliances, artificial legs and truss s.
National Watch Co., Elgin watches and movements.
Pbelps Brothers, California-manufactured bolts, nuts, screws, etc.
N. W. Spaulding, circular saws with Spaulding's patent teeth.
Brittan, Holbrook & Co., japauued and copper wars.
H. T. Graves & Co., wire goods.
W. T. Garratt, brass work.
M. Fulda & Son, mammoth wine cask.
Korbell & Brotbers, California veneers,
Johu Mallon, specimens of glass cutting.
M. Clark & Son, California stoneware.
Whittier & Fuller, mirror silvering.
Pacific Oil and Lead Works, paints and oils
Mrs. C. Cook, hair jewelry.
Pacific Plate Works, gold and silver plating.
Saratoga Paper Mills, straw wrapping paper.
D. Hicks & Co., book binding.
Kimhall & Co., display of California carriages.
O. F. Willey, light open buggy and turndown phaeton.
Larkins & Co., no top buggy aud Concord spring buggy.
Stone & Hayden, display of harness and team collars.
Manasse & Baker, display of tanned leatber and skins.
P. Kelly, boots and shoes.
M. M. Cook & Sou, leather belting and hose.
N. P. Cole & Co., Californuia manufactured cabinet work,
Dana & Codington, California mauufactured curled hair.
Samuel M. Brookes, still life paintings, 77 and 78.
G. J. Denny, marine oil painting.
F. Serigni, superior penmanship and drawing.
James Lick, ornamental frames, clock case and gilded glass plates.
John W. Cherry, gold letters on glass.
Noble & Gallagber, embossed, enamelled and ornamental gilding on glass.
Miss Marion Blanchard, wax work.
Jacob Zeeb, upright piano forte.
Kohler, Chase & Co, Mason & Hamlin's cabinet reed organs.
Eureka Manufactory, wadding, batting and comforters.
Orcgon City Woolen Mills, samples of cassimeres.
K. Meussdorfer, hats.
H. Liebes, furs.
Ed. Muller, silk culture.
L A. Gould, apples, pears and grapes.
D. L. Perkins, 146 varieties of seeds.
D. Ghiradelli & Co, chocolate, broma and cocoa.
Brignardello, Michaevello & Co, farina, Italian paste and vermicelli.
Boston Cracker Co, crackers, cakes, etc.
F. Seibert, red wine and brandy.

DIPLOMAS AND CERTIFICATES OF MERIT.

CLASS I.—Section 1.

H. J. Booth & Co., horizontal steam engine, diploma.
J. T. Ford, miniature steam engine, oer.
G. T. Pracy, 8-inch engine, with fittings, dip.
H. B. Martin, double acting oscillating steam engine, dip.
Michael Lawton, model of steam engine, dip.
T. W. Burns, Taylor oil burner, dip.
J. W. Bowker, spark catcher and smokc killer, dip.
Edwin Squires, 1-horse power steam engine, dip.
David Stoddardt, Pickering governors, dip.
Fuller & Co., Johnson's oqualizing steam heater, dip.
J. L. Constable, patent steam packing and piston, csr.
Troadwsll & Co., Hoadley's portable steam engine, dip.

Section 2.

A. Meycrs, Leffsl American double turbine, dip.
Fuller & Co., Bodine Jonval wheel, cer.
D. Stoddart, Cameron special steam pump, cer.
D. Stoddart, Sewell & Cameron's fly-wheel pump, cer.
W. D. Hooker, hand pump, cer.
W. H. T. Clark, hand pump, cor.
Hanscom & Co., Hayes' steam pump, dip.
Baker & Hamiltou, Earle steam pump, cer.
V. Cushing, Excelsior hand pump, dip.

CLASS II—Section 1.

Kindloberger & Arnold, double acting blind wiriug machine, dip.
Otis Jackson, endless or band saw, dip.
Pilkington & Laue, Excelsior wood saw, dip.
Geo. A. Day, jig belt saw, dip.
Geo. T. Pracy, upright drill, cer.
T. D. Young, sngine lathe, cer.
Wm. Sellers, (Pbiladelphia), bolt cutting machine, dip.

Section 2.

J. W. Quick, quartz smutter and shaker screens, dip.
A. S. Hallidie, improved grip pulley, dip.
B. P. Ridsr, model of brick macbine. dip.
A. Williams, model of brick machiue, cer.
Atwood & Bodwsll, Excelsior windmills, dip.

CLASS III.

Hanscom & Co., foundry and cupola in operation, dip.
W. H. Hepburn, amalgamating pan, dip.
Thompson Bros., Patterson's patent forge, dip.
Porter & Collins, quartz crusher and duster, cer.

CLASS IV.

Treadwell & Co.. Russell's threshing macbine, dip.
H. G. Pratt & Co, Eagle hay press, dip
L. L. Sawyer, Finlayson's seed sower, dip
Baker & Hamiltou, sweopstake horse fork, dip
Hunter & Weister, grain separator, cer
M C Hawley & Co, Buckeye mower and reaper, with self-raking attachment, cer
M C Hawley & Co, Burdick's national hay cutter, cer
Ives Scoville, side hill plow, cer

CLASS V—Section 1

Lloyd & Stewart, improved anchor, dip.
I E Thayer, model of pilot boat, cer
Murdock & Campbell, model of pilot boat, dip
James Houseman, model of yacht pilot boat, dip
John E Kennedy, model of propeller screw, dip
B Reiley, set of hinged row locks, dip
O T Stacy, steering apparatus, dip.
L D Herrick, metallic life boat, dip.

Section 2.

A J Plate, hunting rifles and shotguns, dip
Wm Rudolph, improved gun lock, dip.
Potter, brooch-loading gun and projecttiles, dip.
Church & Clark, fireworks, dip.
W T Garratt, two brass 2-pound cannon, cer.
Cranmer & Holden, revolving battery gun, dip.

Section 3.

P. Portois, earthquake-proof chimney, dip.
Pacific Wood Preserving Co, specimens of prepared wood, dip.
W Lynch, Lynch's improved reflector, dip.
M. Clark & Sou, sewer and water pipe, cer.
B H Freeman, stair work, dip.

CLASS VI.

Lundborg & Marwedel, case of telegraph instruments, dip.
California Business University, telegraph instruments, cer.
Fairbanks & Hutchinson, platform and counter scales, dip.
A. E. H. Braun, trusses, dip.
Mrs. M. A. Suydam, patent cornea restorer, dip.

CLASS VII.

J. Perham, stove-pipe shelf, cer.
George Rubens, saucepan cover, dip.
John McLeod, combined latch and lock, cer.
John Nestor, weatherboarding tool, dip.
F. T. Houghton, petroleum stoves, dip.
Charles Otto & Co., case of brass and plated hardware, dip.
Henry Axtell, two pairs wire cutters, dip.
A. L. Stemson, Westlake patent lanterns, dip.
American Saw Compauy, samplos of perforated saws and movable teeth, dip,
C. H. Foster, substitute for brass hinges, dip.
J. B. Owens, coal oil stoves and lamps, cer.
Standard Soap Co., snbmerged coffee pot, cor.
Matthsw Cooke, giaut wedges, dip.
Weed & Co., brass goods, dip.
M. Price, cutlery, dip.
Joshua Gray, samples hroom, solder, piano covering and hook and eye wire, dip.
F. B. Lamb, stovs-handle and household tool, cer.
Kindleberger & Arnold, reversible loose joint butts, cer.
Carl Hinz, moulding tools, d'p.
Garvey & Kimball, steamboat aud house bells, dip.
John Bobu, stoves and fixtures, dip.
L. D. Herrick, Hendrickson's chimney top and Herrick's sprinkler, cer.
Root & Nye, gas fixtures, dip.
Cassin & Proctor, patent funnel, dip.
Will & Finck, hotel aununciators, dip.
W. T. Garratt, California-made hells, dip.
J. H. Culver, improved calipors, dip.
H. Vail, iron planes, dip.
C. O. Bagley, window-blind fastener, dip.
Loyd & Tetlow, patent sewing needle, dip.
Tay, Brooks & Backus, japanned ware, dip.
Wm. H. Woods, steam cylinder cocks, dip.

CLASS VIII.

Thomas J. Hall, willow ware, dip.
I. E. Thayer, stick of laurel timber, dip.
Figer Brothers, hrushes, dip.
S. P. Taylor & Co., hrooms, dip.
E. A. Stockton, washing machine, dip.
D. G. Lswis, mangle and wringer, dip.
Jacob Wbitney, washing macbins, cer.
F. W. Arnold, casks, barrels and kegs, dip.
Miss M. P. Carpenter, fluting machine, dip.

CLASS IX.

S. & G. Gump, mirrors, dip.
A. S Hallidie, plumbago, dip.
Thomas O'Niel, samp.es of cut glass, dip.
Haynes & Lawton, chinaware, dip.
R. A. Swain & Co., fancy goods and cut glass, dip.
Albiou Pottery, pottery ware, dip.
Son & Briggs, meerschaum pipes, cer.

CLASS X.

J. J. Knowlton, ink, dip.
S. Pillsbury & Co., Mme. Balcear's washing fluid, dip.
S. Pillsbury & Co., Paropa Rosa's toilet companion, cer.
S. Pillsbury & Co., liquid laundry blue, cer.
Cordillera Silver Mining Co., rare and costly minerals, cer.
G. P. Rose, collection of minerals, cer.
George Pheiffer, model cabinot, cer.
Hugo Mabnz, aniline dyes, dip.
Pacific Match Factory, block matches, oer.
M. Lebatard, Russian inflammable balls, cer.
George Heuter, ocment, varnishes, sealing wax, etc., dip.
Dana & Codington, oil and glue, dip.
Hucks & Lambert, axle grease, dip.
Standard Soap Co., variety of soaps, dip.
A. Golsh, California safety matcbes, dip.
Crane & Brigbam, sulphate of copper crystals, dip.
Vichy Water Co., vichy water, dip.
Napa Soda Co., Napa soda, csr.
Pacific Congress Water Co., Pacific congress watsr, csr.
J. F. Fuggazzi, perfumery, cer.
Biggs & Gardner, display of ores, dip.

CLASS XI

J. C. Hilton, stencil dies and steel figures, dip.
San Francisco Plating Works, nsw and old ware plating, dip.
Geo T Casebolt, plated carriage lamps and trimmings, dip.
John J Joiner, metallic signs and engraving on metal, dip.
George M Wood & Co, door plates and seals, dip.
F M Trueworthy, stencil plates and impressions, dip.
Dr D S Hutchiuson, specimens of mechanical dentistry, dip.
Geo W Patch, samplss of stencil work, cer.

CLASS XII.

Cubery & Co, spscimens of printing, dip.
A W Stott, card engraving, dip.
Geo B Hitchcock, lstter press and display of books, dip.
H H Bancroft & Co, law blanks, gold pens, etc, dip.
Paul & Linforth, Russell's Eureka combination printing cass, dip.
A. L. Stemson, patent check cuttsr, dip.
Burgess & Stratton, patent music folios and music files, cer.
Henry White, travelers' scrap book, cer.

CLASS XIII.

Lawton & Co., milk wagon, dip.
Paul Frievhofer, brewery wagon, dip.
George R. Cramer, dumping wagon, cer.
Wm. M. Betts, carriage springs, dip.
A. W. Burnham, two buggy woods, dip.
S. L. Pereria, railroad springs, dip.
Wm. H. Hughes, tire upsetter, dip.

CLASS XIV.

Mrs. Whiting, portable wheel cap, dip.
Edward Galpen & Co., Saratoga trunks, dip.
H. Behrendt & Co., sole leatber trunks, dip.
L. Price, boots and shoes, dip.
Broderick & Kast, boots and shoes, cer.
Malone & McMahon, tanned skins, cer.
Lawless Brotbers, ladies' saddle, dip.
B. Falck, leather frames, baskets, etc., cer.
Mrs. A. D. Baker, leather bracelets, etc., dip.
Mr. Barr, (Sacramento) California saddletrees, dip.

CLASS XV.

Mrs. H. E. Morton, reception chair, oer.
Thornton & Westlsy, sofa bed and bed bottom, dip.
Strahle & Hughes, billiard table, dip.
Blythe & Wetherbee, pyrographic wood, dip.
A. Litzins, California easy chair, dip.
Geo. O. Whitnsy & Co., display of imported furniture, dip.
Lazzaro Castagnino, two specimen tables marqustrie work, dip.
L. L. Sawyer, California improvod window shade, cer.
Jones & Wooll, gilt mantle mirror frames, dip.
Deroms & Strout, enclosed bed, dip.
A. J. Forbes, pet of boudoir, cer.
Jacob Schreiber, imported garden furniture and store stools, cer.

CLASS XVI.—Section 1.

Samuel Walker, portraits, dip.
John Wilson, landscapes, dip.
Robert E. Ogelby, crayon sketches, 56 & 57, cer.
Geo. H. Burgess, Pencil Drawings, cer.
Norton Bush, tropical sketches and bay of Panama, cer.

Section 2.

California Business University, practical commercial penmanship, dip.
Mallon & Boyle, glass staining, dip.
Jas. E. Wolfs architectural drawings, dip.
Mrs. H. S. Hutchinson, medley picture, dip.
Joseph S. Mitchell, marble picture frame, dip.

Section 3.

Sweet & Gadsby, imitation of marble and wood, dip.
James W. Lunny, lettering on glass, cer.

Section 4.

Mrs. M. E. Doherty, hair work, dip.
Mrs. Swanton, moss work, dip.

D. Dennechaud, artificial flowers, dip.
Mrs. Richard Brown, skeleton leaves, dip.
Mrs. May, bouquet of skeleton leaves, cer.
Mrs. Bennett, wax work, cer.
Mrs. S. A. Sanderson, moss work, cer.
Mrs. A. de Yonng, pin picture, cer.
Mrs. J. J. Daggett, shell frame, cer.
Miss Winnifred White, picture in sea moss, cer.
Miss Emma Blanche, wax cross and wreath, dip.
Miss Mary Pennie, wreath of California poison oak, cer.
Mrs. J. Widie, beaded pin cushion, cer.
Mrs. F. B. Medena, 2 shell wreaths, cer.
Miss Kate Mitchell, picture and frame made from California leaves and flowers, cer
Miss Nellie Welty, 4 pieces bead work, cer
Mrs M G Coffin, wreath of sea moss from Alaska, cer
H Kahn, case of artificial flowers, cer
Mrs V E Howard, boquet of artifical flowers, made from eilk cocoous, cer

CLASS XVII

F B Schoestein, orchestrion machine, dip
A A Rosenberg, California publication of music, dip
M W Willis, case of brass band instruments, Louis Schreiber's patent, dip

CLASS XVIII.—SECTION 1.

A Hahne & Co, Pioneor factory, wadding, batting and comforters, dip
Alexander Mackay, rag carpeting, dip
W D Perrin, Sacramento, samples of California flax in plant and fiber, dip
Main & Winchester, robes and blankets, cer
Geo. Macy, rag mats, cer

SECTION 2.

S. Figel, boys' clothing, dip.
Joseph Figel, boys' clothing, cer.
Norcross & Co, regalia and embroidery, dip.
M. Ettinger, friuges, trimmings and cords, dip.
H. R. Cabery, Chicago, Masonic jewels and and regalia, dip.
Pacific Pioneer Paper Collar Co, paper collars and cuffs, dip.
Pacific Straw Works, straw goods, dip.
R. M. Adams, hats and caps, dip.
Pacific Necktie Factory, cer.

CLASS XIX.

Mrs. Fanny P. Chandler, knit bedspread, dip.
Mrs S E Holliister, knit bedspread, cer.
Mrs Schrinor, crochet bedspread, dip.
Mrs H Robson, crochet bedspread, cer.
Sarah E Hoadley, bedquilt, dip.
Miss Lizzie Martin, Joseph's Coat of Many Colors, bedquilt, cer.
A H Suplee, Affghan, dip.
M Peterson, affghan for carriages, cer
Mariah Sutherland, tapestry picture, "Crowning of Queen Esther," dip
L H Bailey, worsted pictures, cer
Mrs A Van Dusen, down capes and trimmings, dip
Mrs C E Caswell, case of millinery, dip
Mme. C. Goldberg, cass of millinery, cer.
Mrs. J. A. Mayhew, dressmaking' dip.
Women's Co-operative Union, needlework, dip,
Ladies' Depository, cambric embroidery, dip.
Mre. R. W. Bessey, eilk and flannel embroidery, dip.
Mrs. Dannenberg, infante' apparel, dip.
Mme. Pronsergue, children's underwear, cer.
Mrs. James Sullivan, silk and flannel embroidery, cer.
Mrs. Mary E. McClellan, tatted tidy, dip.
Miss Viola Lilienfeld, infant robe trimmed with tatting, cer.
Mre. C. Latham, chenille shawl, dip.
Mrs. F. B. Medena, worsted wreath, dip.
F. Entz, perforatsd stamping, dip,
Mrs. Regensberger, embroidery, new kind, dip.
Mrs. J. G. Klumpke, embroidered rug dip.
Mrs. A. S. Magendi, sofa pillow, cer.
Mrs. W. H. Parker, craps and chenille cushion, cer.
Miss R. H. Chandler, needlswork, "English Coat of Arms," dip.
Mrs A. H. Ruggles, neckties, dip,
Mrs. W. Scott, embroidery in chenills and velvet, cer.
H. Friedlander & Co., case of uudsrwear. cer.

CLASS XX.—SECTION 1.

Thomas Appleby, cnt flowsrs, dip.
B. F. Headen (Santa Clara), fruit, dip.
J. Strentzel (Martinez), foreign grapes, dip.
J. Greenall (Sacramento), apples, dip.
J. W. Patterson (San Joee), plums, dip.
A.P. Smith (San Diego), mulherry trees 2 years old, dip.
D. F. Adams (San Jose), apples, dip.
George Smith (Sacramento river), largest sweet potatoee, dip.
R. B. Woodward, foreign plants, dip.
G. W. Tarlton (San Jose), second best applee and squashes, cer.
R. S. Thompson (Napa), best exhibit of grapee, dip,
E. Andrews (Soucma), exhibit of Duchese d'Anglems peare, dip.
Gsorge West (Stockton), exhibit of grapes, cer.
R. Kercherall (Sacramento river) pound pears, cer.
E. H. Nordgreen (Saratoga, Santa Clara) sample of apples, cer.
R. Mowry (Suscol) large gloria mundi apples, cer.
S Hawk, Sacramento. specimens of fruit, cer.
J Runyon, Sacramento river, specimens of applcs, cer.
J W Gals, Sacramento, specimens of fruit, cer.
R B Woodward, hothouse foreign grapes, dip.
M Ryan, Sonoma, orangs and lemon trees bearing fruit, dip.
B F Headen, Santa Clara, unfermeuted graps juice, dip.
Robert Williamson, Sacrameuto river, white potatoes, dip.
J O Brown, large sweet potatoes, dip.
S Huff, San Leandro, mammoth squashes, cer.
M Hosenberg, Sacramento, California almouds, (large) dip
M Hoseuberg, Mediterranean sqnaches, dip
Boggs Brothers. Sherman Island, citrons and watermelons, dip
E A Upton, dahlies and plants, dip
W S Jacks Napa, Italian chestnuts, dip
R C Perkins, Japancse tea plant, dip
H F Hutchinson, ramie plant and fibre, dip
Jamee B Welty, Yolo county, samples of mnlberry trees two years old, cer
Mrs Hildenhagen, Rnssian cigarriios, dip

SECTION 2.

D. R. Prevost, best display of wins vinegar, dip.
Boston Cracker Bakery, crackers and bread, dip.
California Sugar Refinsry, sugars and syrnps, dip.
H C Hndson & Co, mustard and spices, dip.
H J Clayton, salad dressing and chicken sauce, dip.
Marden & Myrick, coffee, dip.
Mre E D Hals, Stockton, assorted jelliee, dip.
J S Harbison, Sacramento. honey, dip
Dr J Strentzel, Martinez. wine vinegar, dip
Henry Lake, salad oil, dip
Geo A Brach: sample of decorated confectionery, dip
California Pickls Factory, pickles and eaucee, dip
Oakley & Co, cracked wheat, hominy, farina, oatmeal, etc, dip
J C Merrili & Co, Sandwich Island sngar, dip

SECTION 3.

C J Leiding, Sonoma, red wine (Zinfandello), dip
A Fink, sparkling California wins, dip
F & P J Cassin, Wild Grapa Root Bitters, dip
H H Rhea & Co, old coppsr distilled whiskey, dip
I Landsberger, sparkling California wine, cer
I Landshergsr, second class white wlns, cer
McMillan & Kester, eyrups, essences and cordials, dip
Lake Vineyard Co, second class red wine, cer
F & P J Cassin, grape brandy hitters, cer
Lyons & Co, ales and porter, bottled by J D Robertson, cer
M Deschamps, third-class California brandy
L Gros & Co, I X L bitters, cer
M Keefer & Hollander, Nsw Orleans, Malakoff bitters, dip
A Bona, whiskey punch, cer
F Pntzman, Prnssian bitters

CLASS XXI

A. Weyer, silk and woolen cleaniug, dip,
Hnbert Bnrgess, national system of drawing, dip.
Wan Yune Lung Kee, display of teas, chnrch flowers and fancy articles, dip.
E F Lorqnin, stuffed birds, animals, etc, dip
J D Barr, umbrellas and parasols, dip
Lyons Bros, parasols. cer
John F Snow, specimens of feather and glove cleaning, dip
V S W Parkhurst, mouey drawsr and combination lock, dip
Kittredge & Leavitt, safe lock, dip
H Trus & Co, burglar alarm telsgraph, dip
Fairbanks & Hntchinson, money drawer, cer

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GEORGE PARDY, Secretary.
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[Special Notice.]

Winn's Patent Shampooing Apparatus

By the use of the apparatus here shown, the unpleasant mode in which the operation of shampooing is usnally performed, is converted into a neat and tidy process, very effective and decidedly agreeable. By the aid of this apparatus, the head is washed and scrubbed in a hath of water, of any desirable quantity or temperature, and the employment of which, upon the top of the head, is productive of the most delightfully agreeable sensations, such as impart an entirely new feature to the process of shampooing. The apparatus is tasteful as well as suhstantial in its constructiou; and its use is equally as effective when applied to the long,flowing hair, as worn by the ladies, as to the shorter hair of gentlemen's wear.

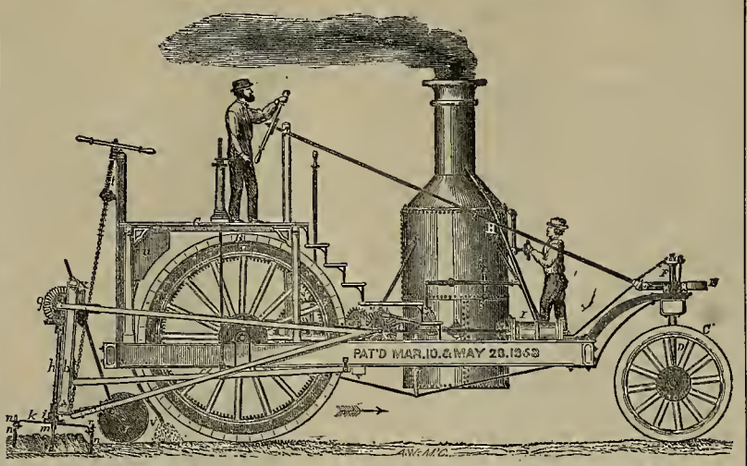
To form this apparatus, a rim or hottomless pan is first constructed, with a gutta percha lining so devised and provided with an elastic strap, as to fit tightly around tho head, below the priucipal part of the hair. The drapery or curtain, which is seen to fall helow the rim, is both for ornament and use; it serves to conceal from view the somewhat unsightly straps, lining, etc., which form the water-tight joint hetween

the head and apparatus thereto applied, and a subsequent olastic gutter, which is strapped tightly about the head, at the extreme lower part of the hair, to catch any water which may possibly escape from the main apparatus. As seen in the engraving, each has a flexihle tuhe appended, by which the water may be carried off to a sink or other suitable receiving vessel, so that the person will have no occasion to leave his seat during the entire operation, or even to remove his neck-tie.

The soap-suds or any other shampooing fluid which may be employed, is poured upon the top of the head, within the rim, after it has been properly adjusted, and a hrush or mop, or sponge, or any other suitable instrument, is theu employed within the hody of the liquid to clean the head and hair. The liquid is readily discharged through a stop-cock and the tube shown in the rear, and fresh water for rinsing applied, as often as may be desirable. Standards, with curved rests or supports, placed upon the shoulders, and adjusted by screws upon the top, all shown in the engraving, are affixed for the purpose of taking the weight of the apparatus and a portion of the weight of the water from the head. The flexible rim which adjusts the apparatus to the head makes this device practicahle.

Previous to putting on the rim an elastic strap is placed around the head to hold up the hair intended to he included within the rim, when it may be properly washed and cleansed. This arrangement is particularly useful and indispensable in fact, in shampooing the head of a lady with flowing hair. This combined apparatus renders the process of shampooing as easily and as readily performed for a lady as for a gentleman. Mr. M. L. Winn, of this city, the inventor and patentee, exhibited his apparatus and the practical employment of the process, in the Mechanics' Fair, and will soon open a saloon iu this city. The patent was ohtained by the M. & S. Press Patent Agency.

The Standish Patent California Steam Plow.



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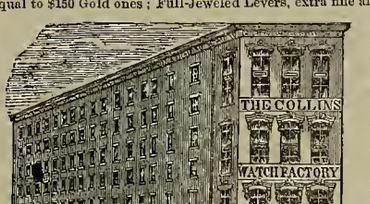

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Having established the first Practical Mining and Metallurgical School in the United States, I would call the attention of gentlemen who may wish to obtain a practical knowledge of

Chemistry, Assaying and Metallurgy,

That I am prepared to teach all the above branches in less time than in any European School.

I also undertake to work any kind of ore, or mineral substances.

Special attention I would call to all parties who have the so-called rebellious ores, that I undertake the construction of any kind of Smelting, Chlorination, Amalgamating, Refining, or Manufacturing Works.

I refer not to single persons, but to all the works which I build in the States of Nevada and California, all of which are in successful operation.

For terms, apply to JOS. MOSHEIMER,
Practical Chemist and Metallurgist.
Office, 328 Montgomery street; Metallurgic Works, 2905 Powell street, San Francisco. 16v19-3m.

G. W. STRONG,

ASSAYER AND WORKER OF ORES,

No. 10 Stevenson street, near First, San Francisco.

Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms. 14v15qr.

Professional Cards.

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CONSULTING ENGINEER

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(Having had 33 years' experience in Europe and America, supplies drawings and designs for Pumping, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco. 21v18-1y

J. BALL,

DENTIST,

645 Clay Street, bet. Montgomery and Kearny,

SAN FRANCISCO. 20v19-1m

JOHN ROACH, Optician,

Has removed from 522 Montgomery street to

540 Washington street,

East of Montgomery.

Surveying Instruments made, repaired and adjusted 22v17-3m

JAMES M. TAYLOR,

Attorney and Counsellor at Law,

Court Block, 636 Clay Street

SAN FRANCISCO.

2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.

GRAY & HAVEN,

ATTORNEYS AND COUNSELORS AT LAW,

In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,

27v16 SAN FRANCISCO.

R. G. ROWLEY,

ATTORNEY AND COUNSELOR AT LAW,

618 Merchant street,

Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf

Blake's Patent.

THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's

Patent Steam PUMP

It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted PERFECT under all circumstances. Send for a circular.

BERRY & PLACE, 112 and 114 California st., San Francisco.

The Perfection of Prepared Cocoa.

MARAVILLA COCOA.

Sole Proprietors—TAYLOR BROTHERS, London.

The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.

"A SUCCESS UNPRECEDENTED."

[See following extract from the Globe of May 14, 1868.]

"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."

Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London. [3v19-6m

AN INTERNATIONAL EXHIBITION seems likely to be held at Washington in 1871. Gen. Grant subscribed $5,000, and over $125,000 has already been secured to the fund.

THE Helena (Montana) *Gazette*, of October 22d, states that a boiling spring has been discovered in the vicinity of the Big cañon of the Colorado, which throws a stream five feet in diameter to a height of 100 feet!

APPOINTMENT.—Our Agent, Mr. J. A. Sullivan, is authorized to act as agent for the *Mining and Scientific Press* in this county. We wish him success in his journeyings around the country.—*Calaveras Chronicle.*

THE Amador *Ledger* has commenced its 15th volume. Springer is a veteran printer and a popular publisher.

To Advertisers.

After January 1st, 1870, the latest hour for receiving mining and other advertisements for the M. AND S. PRESS will be during Thursday evening, as our paper will be printed for the interior mails on Friday morning.

A VALUABLE BOOK FOR INVENTORS AND ARTISANS.—Dewey & Co., publishers of the MINING AND SCIENTIFIC PRESS, have just issued a neat little volume of over five hundred well executed wood cuts of the principal mechanical movements known. These useful representations of the various appliances of power are printed side by side with explanatory notes, which makes the subject clear to every reader. Such a book should be in the hands of every mechanic, and form part of every public school library. It is a handy book, and cheap enough for every farm, shop and factory. Sent to any address from the M. & S. PRESS office, postpaid, for $1.—*New Age.*

BOOK ON EARTHQUAKES.—A Treatise on Earthquake Dangers, Causes and Palliatives, by Prof. Thomas Rowlandson, comprising Earthquake Dynamics; Earthquake Waves, Sound that attends Shocks, Lime, Mortar, etc., Cosmogony and Scismogony, Phenomena of the Neapolitan Earthquake of 1857, and General Observations respecting Structural Arrangements. Published by Dewey & Co., Mining and Scientific Press Office, San Francisco, 1869, containing 96 pages. Price 50 cents, postage free.

TREATMENT OF REBELLIOUS SILVER ORES, by Charles H. Aaron—a pamphlet of eight pages, of concise reading, of practical value to parties interested in the subject. Printed and sold by Dewey & Co., at this office, for 25 cents, post paid.

THE EYES are the most precious of all organs For that reason they should be used carefully and treated scientifically. At the first sign of failing application should be made to MULLER, who will supply a pair of spectacles which will make old eyes as good as new. *

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

A NEGLECTED COUGH, cold or sore throat, which might be checked by a simple remedy like "*Brown's Bronchial Troches*," if allowed to progress, may terminate seriously. For Bronchitis, Asthma, Catarrh and Consumptive Coughs, "*The Troches*" are used with advantage, giving oftentimes immediate relief. Singers and public speakers will find them also excellent to clear the voice and render articulation wonderfully easy.

THE PAIN KILLER is both an internal and external remedy.

THE PAIN KILLER should be used at the first manifestation of cold or cough.

THE PAIN KILLER.—Don't fail to keep it in the house ready for use.

THE PAIN KILLER is an almost certain remedy for CHOLERA, and has, without doubt, been more successful in curing this terrible disease than any other known remedy, or even the most eminent and skillful physicians. In India, Africa and China, where this dreadful disease is ever more or less prevalent, the PAIN KILLER is considered by the natives, as well as by European residents in those climates a SURE REMEDY.

THE PAIN KILLER.—Each bottle is wrapped with full directions for its use.

THE PAIN KILLER is sold by all druggists and dealers in family medicines.

REDINGTON & CO., and HOSTETTER & SMITH, San Francisco, General Wholesale Agents. no6

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons,

Sore Throat, Sudden Colds, Coughs, Etc.

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

CO-OPERATIVE UNION STORE.—This is becoming one of the most useful institutions in the city, and the Mechanic and Laboring Man fully appreciate it. They are now enabled to buy their Groceries and Provisions 20 per cent. cheaper than ever before, and the very best articles in the market. The store is located at 115 Sutter street, Lick House Block San Francisco. 24v18-4w

PHOTOGRAPHY.—For CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction,

10v18 6m B. F. HOWLAND.

RETURNED.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

New Mining Advertisements.

CAUTION.

Senator Silver Mining Company—Location of Mine: Storey County, State of Nevada.

Notice is hereby given, that the following named shares in the capital stock of the Senator Silver Mining Company, designated by the name and number of certificate of each parcel of said stock, as by law provided, were sold at public auction on the eighth day of November, 1869, for delinquent assessments thereon, and will not be transferred by the Company;

Names.	No. Certificate.	No. Shares.
Mrs B Bell	8	60
E G Bidleman	109	50
E G Bidleman	110	50
E G Bidleman	116	20
E G Bidleman	117	20
E G Bidleman	119	20
E G Bidleman	120	10
E G Bidleman	127	10
E G Bidleman	128	8
E G Bidleman	135	100
E G Bidleman	136	100
E G Bidleman	139	100
E G Bidleman	140	20
E G Bidleman	141	27
E G Bidleman, Trustee	79	100
E G Bidleman, Trustee	81	80
P W Dillon	32	50
P W Dillon	33	50
P W Dillon	34	50
Wm Farrell	131	10
Michael Herlehy	unissued	8
John Hamill	66	15
John Hamill	67	15
John Hamill	106	15
Miss Mary McMahon	29	15
Peter McKewen	24	30
Thos Newcomb, Trustee	47	100
Miss Mary J Neagle	85	30
Chas Ockel	unissued	5
B F Page	19	15
B F Page	124	10
D Richards	146	20
D Richards	150	50
Harvey Strong	20	15
Michael Shell	unissued	10
Bartholomew Wood	36	30
B Wager	126	25

T. B. WINOARD, Secretary.
San Francisco, Nov. 8, 1869. no27 1w

Pilot Mining Company—Location of Works: White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of November, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room No. 7, 423 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the third day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighteenth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. M. HARRON, Secretary.
Office, Room No. 7, 423 California street, San Francisco, California. no27

Mining Notices—Continued.

Alleghany Consolidated Gold Mining Company, Location of Works: Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Tompkins	9	1500	$450 00
A L Whitney	32	185	55 50
Charles Adams, Trustee	12	1000	300 00
I N Thorne	13	125	37 50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 37, New Merchants' Exchange, on the fifteenth day of November, 1869, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. oc30

POSTPONEMENT.—The above sale is hereby postponed until Monday, the sixth day of December, 1869, at the same hour and place. By order of the Board of Trustees.

no20 J. M. BUFFINOTON, Secretary.

Bucklin Silver Mining Company.—Location of Works: White Pine District, White Pine County, Nev.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the thirtieth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J W Bucklin	2	500	$25 00
J W Bucklin	3	500	25 00
J W Bucklin	4	500	25 00
J W Bucklin	41	300	15 00
O W Rogers	12	100	5 00
Joseph Lawler	35	2000	100 00
Thos H Brooks	37	100	5 00
M Emma Faber	82	100	5 00
Abram Moger	no cert.	issued	1612	80 60

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 40 Merchants' Exchange, California street, San Francisco, on the thirtieth day of November, 1869, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

S. D'ELL STONE, Secretary.
Office, No. 40 Merchants' Exchange, California street, San Francisco. no13

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty (50c.) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner Montgomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Glenwood Mill and Mining Company.—Location of Works: Greenwood, El Dorado County, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twelfth day of October, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
Balch, S M	not issued	70	$21 00
Jameson, L	24	70	21 00
Keenan, W	not issued	70	21 00
Wells, F H	not issued	75	22 50
Wood, J H	19	140	42 00
Wood, J H	31	67	20 10
Wood, J H	not issued	105	31 50

And in accordance with law, and an order of the Board of Trustees, made on the twelfth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on Tuesday, the seventh day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

O. D. SQUIRE, Secretary.
Office, 418 California street, San Francisco, Cal. no20

La Blanca Gold and Silver Mining Company.— Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of November, 1869, an assessment of one dollar ($1) per share was levied upon the assessable capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at his office, 312 Front street, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the twenty-first day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

JOSEPH GOLDMAN, Secretary.
Office, No 312 Front street, San Francisco, Cal.

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of July, 1869, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, A. CASELLI, southeast corner of Montgomery and Jackson streets, San Francisco.

Any stock upon which said assessment shall remain unpaid on the fourth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-seventh day of December, 1869, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. oc30

Mount Tenabo Silver Mining Company.—Location of Works: Cortez District, Lander County, State of Nevada.

Notice is hereby given, that the Annual Meeting of Stockholders of the above named Company, will be held on Thursday, the 25th day of November, 1869, at 7½ o'clock P. M., at the office of the Company No. 426 Montgomery street, San Francisco, for the election of Trustees to serve the ensuing year, and for the transaction of other business.

CHAS. F. SCHULZE, Secretary pro tem.
Office, 426 Montgomery street, San Francisco, Cal.
San Francisco, November 10th, 1869. no13

Pocahontas Gold Mining Company.—Location of Works: Mud Springs, El Dorado County, California

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of November, 1869, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at the office of the Company, No. 419 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twelfth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.
Office, 419 California street, San Francisco, Cal. no20

Silver Star Consolidated Silver Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1869, an assessment of fifteen (15) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. no13

Taylor Mill and Mining Company,—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of November, A. D. 1869, an assessment of thirty cents per share was levied upon each and every share of the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No 520 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the tenth day of January, 1870, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURFEY, Secretary.
Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. no20

Wells Mining Company.—Location of Works: White Pine Mining District, White Pine County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the tenth day of August, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
H M Cox	1	100	$30 00
H M Cox	2	300	90 00
George S Porter	22	10	bal 2 92
George S Porter	24	5	bal 1 46
George S Porter	20	5	bal 1 46
George S Porter	8	268	bal 78 32
George S Porter	4	200	bal 58 45
George S Porter	6	200	bal 58 45
George S Porter	5	200	bal 58 44
George S Porter	8	200	bal 58 45
George S Porter	9	200	bal 58 45
S P Wells	27	10	bal 1 01
S P Wells	29	10	bal 1 02
S P Wells	30	10	bal 1 02
J H Williams	69	979	bal 92 21
F C Larsen	39	5	1 50
A T N Petersen	40	10	3 00
George Amerige	41	10	bal 1 00
W H Kelin	43	5	1 50
Otis V Sawyer	45	20	6 00
Otis V Sawyer	46	20	6 00
R G B Monmouth	48	100	bal 10 00
George S Hoag	42	20	6 00
George S Hoag	44	10	3 00
George B Merrill	59	630	bal 63 00
J D Littlefield	61	630	bal 63 00
George H Russell	64	630	bal 133 12
S M Smith	74	200	bal 20 00
Samuel B Meyer	75	50	15 00
George B Merrill, Trustee	63	631	189 30
Otis V Sawyer	71	1200	bal 112 24

And in accordance with law, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Wells Mining Company, No. 439 California street, City of San Francisco, on the seventh day of October, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. RUSSELL, Secretary.
Office, No. 439 California street, San Francisco. se25

POSTPONEMENT.—The above sale is hereby postponed until Monday, the first day of November, 1869, at the same hour and place. By order of the Board of Trustees.

oc9 GEO. H. RUSSELL, Secretary.

POSTPONEMENT.—The above sale is hereby postponed until Monday, the fifteenth day of November, 1869, at the same hour and place. By order of the Board of Trustees.

nov6 J. H. H. WILLIAMS, Secretary pro tem.

POSTPONEMENT.—The above sale is hereby postponed until Wednesday, the first day of December, 1869, at the hour of 12 o'clock M., at the auction rooms of Maurice Dore & Co., 327 Montgomery street, San Francisco.

no20 GEO. H. RUSSELL, Secretary.

Taylor Mill and Mining Company.—Notice.— The Annual Meeting of the Stockholders of the Taylor Mill and Mining Company, for the purpose of electing five (5) Trustees to serve for the ensuing year, will be held at the office of the Company, No. 520 Montgomery street, San Francisco, on MONDAY, the thirteenth day of December, 1869, at four o'clock P. M.

SAM'L S. MURFEY, Secretary.
San Francisco, November 16th, 1869.

Auction Notice.

We will sell at Public Auction, to pay storage and charges, the following described Merchandise, at Battery Street Warehouse, 819 Battery street, on MONDAY, DECEMBER 27, 1869:

	Names.	Amount.
2 cases	E. P. Swift	$68 00
5 bdls. brackets	H. Chapman	59 50
3 cases	E. G. Whitcomb	132 00
2 bags quartz	Geo. Roberts	39 60
1 bdl & cont's; 1 bag	C. S.	41 00
1 sack ore	John Nightingale	38 50
1 ½ cask	F. C. Belden	37 60
1 case	Capt. J. Porter	37 50
1 sack rock	J. M. Buffington	36 50
1 case	J. F. Sherwood	36 50
1 firkin	D. O. C.	35 50
6 sacks quartz	E. M. R.	61 10
1 sofa frame; 3 pkgs.	W. L. Needman	35 10
1 box (H. P.)	H. Palmer	36 10
1 case (J. M.)	J. Mosheimer	36 25
1 sack cement	McDonald	33 50
1 sack rock	H. A. Gleson	39 50
1 keg wine	Witts	34 10
1 cask	A. B. Earle	51 30
1 lot traps	Mrs. Carpenter	62 25
1 case	W. Kronse	31 10
1 tierce	H. Williamson	33 00
1 bale sacks	J. M. S. Taylor	31 50
1 sack rock	E. N. Robiuson	30 60
1 case	S. Loffman	30 60
6 small cases	H. Hanheimer	49 00
2 cases	S. F. B. Factory	29 75
1 case	E. W. Roberts	29 60
1 box	Chas. E. Laug	28 50
1 box merchandise	H. A. & Co.	28 50
1 trunk	Chas. P. Wilder	29 50
1 lot castings, shafts and wheels	Palmer, Knox & Co.	128 00
1 box	O. R. Woodman	27 25
1 case	A. H. Willen	29 50
2 sacks quartz	W. H. Smith	27 00
1 ½ cask	M. B.	21 50
1 bdle deer skins	L. Decchen	21 50
2 cases	G. S. Beardsley	21 50
2 hay forks	John Findley	20 50
1 case	Mrs. A. K. Turner	21 00
1 chest	H. Williams	19 75
4 pkgs pipe and iron	S. P. Roberts	32 85
1 bbl whisky	B. Mendersoll	21 00
1 box	J. & F. & Co.	20 50
2 iron hubs; wire cloth	Treadwell & Co.	20 00
1 pkg castings	Wm. Lynn	20 25
1 trunk	Mrs. Willis	21 00
1 case	S. W. & Co.	18 50
1 box	L. Daneri	19 50
1 barrel	J. H. Seadent	19 00
4 boxes	G. A. Dyson	53 75
1 case bacon	H. Rosstent	18 75
1 case	Locke & Montague	30 75
1 case	Cal. Fuse Co	19 50
1 bbl wine	Frank Glas	17 00
2 bundles	Order	16 50
1 bdl sash	T. J. Hughes	30 79
1 box	S. S. Allen	30 00
2 cases	S. Hamark	17 50
1 case	Thos. Thyser	44 00
6 boxes	Union Tel. Co	31 00
10 cases	L. P. & Co.	22 75
1 trunk and 1 case	A. M. Peck	23 00
24 bbls sal soda	Order	78 00
4 pks (B in diamond)	Order	68 60
1 chest	J. H. Treadwell	50 75
2 cases	C. B. Land	30 00
1 bundle	Dr. Matthews	49 25
1 bale	W. Shears	47 50
2 cases and 1 hf bbl	Mrs. A. Holmes	43 00
1 case	Orik Johnson	49 75
1 case	Mrs. Flannigan	44 90
1 box	J. H. O'Brien	24 25
1 chest	W. H. Dalrymple	61 12
1 case	J. S.	23 25
1 trunk and 1 box	W. H. Herrick	51 36
1 case and 1 trunk	Mrs. S. P. Penney	49 40
1 box tobacco	J. A. D.	20 00
1 trunk	M. C. Parker	19 00
1 case and 1 bag	S. L. Rogers	20 50
1 keg wine	J. F. Hubbard	17 50
1 box	Lams & Co.	29 25
3 cases	H. H. S.	45 00
1 bellows and 1 anvil	L. C.	24 50
1 bale hops	B. S. & Co.	47 50
1 case	D. M. Wheaton	27 00
3 cases	S. S. Ingham	49 50
1 case	H. Davenport	60 60
1 box	J. W. Jenkins	22 50
5 kegs and 1 box	J. M. Suttou	60 00
5 sacks ore	Valentine & Bro	99 00

W. A. HOLCOMB & CO.,
S. L. JONES & CO., Auctioneers. 22v19-5t

Blasting Accident.

A Smartsville correspondent of the *Appeal* says: On Thursday last, Professor Hafenegger, Mr. Leszinkey, chemist, and Mr. Klause, of the firm of Charles W. Klause & Co., San Francisco, agent of the Hafenegger Powder Company, San Francisco, arrived here with a full supply of material to test the efficiency of their powder in blasting rock. They called on Mr. O'Brien, Superintendent of the Pactolas Company, who introdnced them to the contractors on his tunnel, with whom they made arrangements for the contractors to drill certain holes as they directed, which was done—the powder men to load and discha.ge the same. On Friday two holes were discharged, which proved satisfactory. Three more holes were prepared for operation on Saturday. The powder being used in tin cartridges, they had to be made. Everything was not in order in time to load and fire on Satuiday, and was postponed until Sunday morning, when in tamping, or preparing the cartridge in the drill hole, a premature explosion occurred, killing Mr. Klause instantly, tearing off a portion of his head and one arm. Mr. Herman Smith, one of the contractors, who was assisting, was so terribly mangled that he expired in two hours. Mr. Leszinkey, the chemist, is dreadfully bruised and cut up, and one eye destroyed; legs, arms and sides terribly cut up. Dr. Asay being at home at the time, has taken charge of the sufferer, with the hope of his recovery.

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Room to Let.

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NEWEY & CO.,
Publishers Mining and Scientific Press. 414 Clay st

New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor.
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET.
GENERAL DEPOT:
Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermitent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the velnous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever*: Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever*; Gout, *when the patient is still able to walk*; Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought or 50 cents per dozen. 25v18tf

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Foundry and Iron Works.

HINCKLEY & CO.,
MANUFACTURERS OF

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Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

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21v16-3m W. McCRINDLE, Manage.

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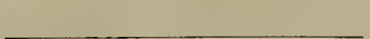

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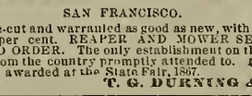

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All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

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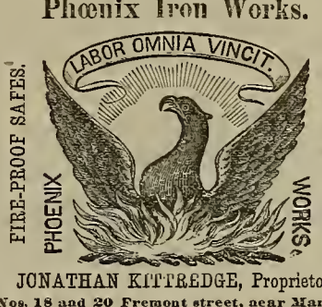

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WILLIAMS, ROOT & NEILSON,

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STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

WILCOX'S PATENT WATER LIFTERS,

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And all kinds of Mining Machinery.

Front Street, between N and O streets,
14v11 SACRAMENTO CITY;

IRA P. RANKIN. A. P. BRAYTON. A. C. AUSTIN.

Pacific Iron Works.

First and Fremont Streets,
SAN FRANCISCO.

Having been established since 1851, we have accumulated a very large variety of Gear and other Patterns, which, with our superior tools and appliances, give us facilities for doing first class work unequalled on the Pacific Coast.

Among other things, we manufacture the following:

STEAM ENGINES,

Horizontal and Vertical, for either Stationary or Marine use.

BOILERS—High and Low Pressure,

Pump, Pipe and Sheet Iron Work of every kind.

Quartz Mill Work,

Including High and Low Mortars, for wet or dry crushing; Furnace Irons for Roasting Ores; Freiberg Barrels; Varney's and Wheeler's Amalgamating Pans and Settlers; Stamp Shoes and Dies of best White Iron; Russia Iron Screens, etc., etc.

Flour Mill, Saw Mill and Sugar Mill Work in every variety; Pumping and Hoisting Machinery; Hansbrow's Patent Chalice Pump, for Domestic, Ship and Mining use—the most approved and successful Pump manufactured.

Castings of every description, Iron and Brass.

We would call especial attention to "Wright's Patent Variable Cut-off Engines," of which we are the sole manufacturers on the Pacific Coast, under license from the Woodruff & Beach Co., Hartford, Ct. As a simple, effective, FUEL SAVING, first-class Engine, this is, without doubt, the best Engine made in the United States.

Orders promptly attended to. Prices as low as possible for first class work, and we intend to do no other.

GODDARD & CO.
San Francisco, May 1, 1868. 18v16tf

FOUNDRY FACINGS.

BENJAMIN ELLIOT,

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Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in barrels. Black Lead, Coke and Soapstone ground to order.

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ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.

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AGENTS FOR

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21v17-qy J. WEICHHART, Proprietor.

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Pioneer Screen Works.

JOHN W. QUICK,

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Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

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Steam Engine Builders, and Makers of all kinds of Machinery,

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Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

Corner of Beale and Howard Streets,
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Steam Engine Builders, Boiler Makers, Machinists, Foundrymen, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.

Directors:

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ALL KINDS OF MACHINERY

MARINE, LOCOMOTIVE,

And Stationary Engines,

Booker Patent Locomotive Stack,

ARMSTRONG PATENT

Heater, Condenser and Filter, Combined.

BOILERS, HIGH AND LOW PRESSURE,

Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Patton's, and Belding's Amalgamating Pans and settlers; Hendy's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white Iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Hendy, Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.

We would call particular attention to our

SCOTT & EOKART CUT-OFF ENGINE.

As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Off at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:

"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eekart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 30-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eekart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 5- or 50 horse power with ease and economy. Awarded silver medal. Wm. Burnett, Monty Fletcher, John Myers."

Pickering Governors, Machinists' Lathes,

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On hand and for sale, Drawings furnished free of cost. Orders promptly attended to. A complete stock of fittings on hand.

We are prepared to furnish all kinds of Machinery at short notice, as our facilities are unequalled on the Pacific Coast.

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Flue or Tubular **Boilers**, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

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Special attention given to Repairing Machinery.
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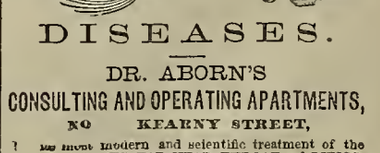

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DR. ABORN'S

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NO KEARNY STREET,

The most modern and scientific treatment of the sees of the EYE, EAR, HEAD, THROAT and LUNGS.
18v19-3m

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VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

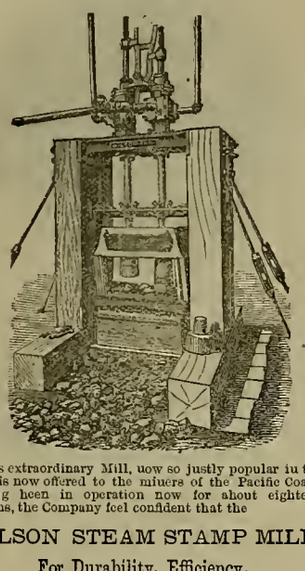
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont street,

1v1 San Francisco.

THE WILSON
Patent Steam Stamp Mill.



This extraordinary Mill, now so justly popular in the East, is now offered to the miners of the Pacific Coast. Having been in operation now for about eighteen months, the Company feel confident that the

WILSON STEAM STAMP MILL,

For Durability, Efficiency,

AND ECONOMY OF WORKING,

HAS NO EQUAL.

The Wilson Steam Stamp Mill is the only Steam Mill that has had the severe ordeal of practical working, and proved itself eminently successful. It is now in operation in several of the Eastern States and Territories, and gaining an envious popularity. The whole machine is so simple as to be readily understood by the most ordinary minds. In fact, its simplicity is its durability. The expense of crushing rock or cement with this Mill is less than one-half the expense of any other Stamp Mill, and less than one-half the cost. For further particulars inquire of

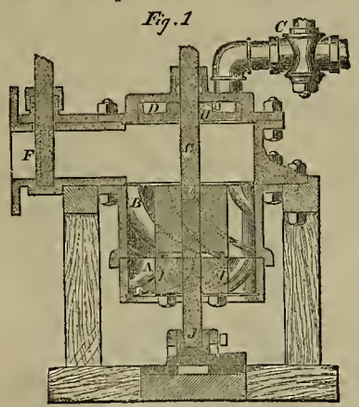
A. BICKNELL, Agent,
Nevada City, California,
Or of THE WILSON STEAM STAMP MILL CO., 326 Walnut street, Philadelphia, Pa.

NOTICE.—All persons are hereby warned not to manufacture or use any Steam Stamp Mills that are an infringement on the Wilson Patents, as they will be prosecuted to the utmost rigor of the law.

F. R. WILSON,
20v19-tf Supt. W. P. S. S. M. Co., Philadelphia.

Lind's Improved Water Wheel

Fig. 1



Has given the highest satisfaction to parties using it. We are now prepared to sell it at reduced prices. Will also contract for all kinds of Machinery—Flour, Saw and Quartz Mill. All our work guaranteed. We will send competent men to put up our Wheels and Machinery. We contract for or do it ourselves. Our extensive acquaintance with millwrights on this coast enables us to furnish millmen with the best of workmen at short notice. Drawings for contracts furnished gratis. Send for circular. **A. LIND, Millwright,**
Pacific Iron Works, San Francisco.
Refer to John Sime and J. J. Haley. 19v19

THE *Mining and Scientific Press* should have an extensive circulation in every mining community on the Coast.—*Placer Herald, Dec.* 19.

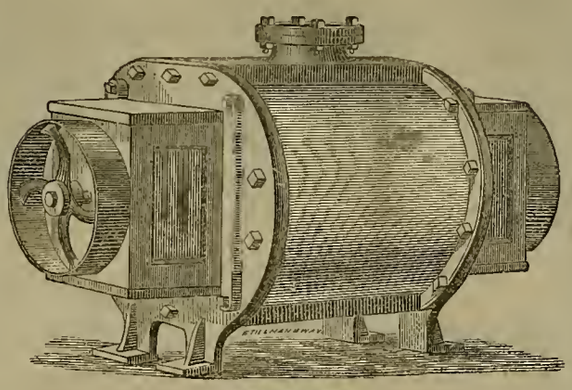
ROOT'S PATENT FORCE BLAST ROTARY BLOWER

MANUFACTURED BY KEEP & BARGION,

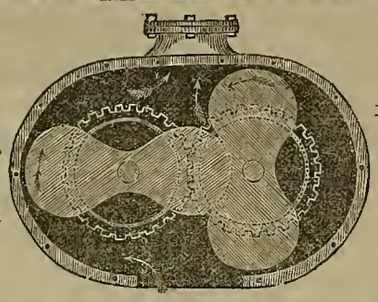
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition.

Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.



ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER Than any Blower Now in use.

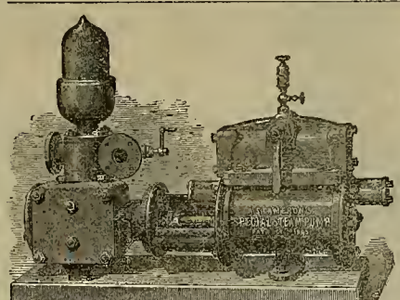
One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,
4v16 3m **Globe Iron Works, Stockton, Cal.**



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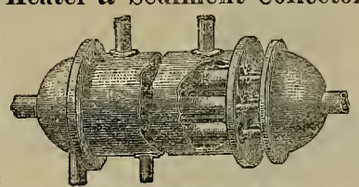
STEAM PUMPS.
PICKERING'S
Engine Regulators.
GIFFARD'S
INJECTORS.
MARINE
ENGINES.
SURFACE
CONDENSERS.

DAVID STODDART,
114 BEALE STREET.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,
16v18-3m Patentee, Sacramento, Cal.

HIBBERD, SANBORN & CO.,

STAIR BUILDERS.

South Point Mills, Berry Street,

Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.

For Miners, Millmen and Metallurgists.

KUSTEL'S NEW WORK,
CONCENTRATION

Of all kinds of Ores, and the

CHLORINATION PROCESS,

For Gold-Bearing Sulphurets, Arseniurets, and Gold and Silver Ores generally.

Price, - - - - - $7.50

A liberal discount to the Trade. For sale by the Booksellers Sent to any part of the United States, postage paid, on receipt of the price. Address,

DEWEY & CO., Publishers,
Office of the Mining and Scientific Press, 414 Clay street
1v16tf SAN FRANCISCO. 1868.

California Steam Navigation COMPANY.

Steamer CAPITAL.....CAPT. E. A. POOLE
" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE.....
" CORNELIA.....CAPT. W. BROMLEY
" JULIA.....CAPT. E. CONCKLIN.

Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE,
13v12 **President**

Mining and Scientific Press.

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The Illustrated Collision—The Fine and Black Arts.

The Mining and Scientific Press, *News Letter*, and *Police Gazette*, have had their "special artists on the spot" of the late smash-up, and with various effect. The Press has a very cleverly executed cut, but what is best, it is quite correct—that is, so far as the cars and engines were concerned. There is no attempt at showing the dead and wounded, with the employés jumping with hair on end. It is a picture from the "scientific" standpoint, we presume, showing the effects of force and motion; a sketch calculating and proper as to place and purpose.

The *News Letter* has attempted to "draw it fine," but succeeded so well in an important particular that we "can't see it"—or couldn't on the spot, in this instance. * * The execution of this picture is somewhat in keeping with much of the humor of the journal in question—like moonshine on a snowbank; pleasing to look at, but too cold for good nature.

But *how* can we describe that black spot in the *Gazette?* * * This is an execution in leather, and would take the medal anywhere. The thing looks as if it had been executed during hot weather and was in a fearful state of decomposition. * * For a pegging-awl sketch, perhaps, this sort of illustration may do; but on the whole, we think the artist had better finish himself with a bare bodkin.—*Oakland News.*

Land Speculators.—Senator Stewart, of Nevada, who has recently returned from a visit to the southern counties, tells the commercial correspondent of the *Union* that there is scarcely an acre of land of any value in any of these counties, except such as was covered by Mexican grants or settled by old residents, but has been gobbled up by half a dozen individuals in San Francisco. The Senator's words were: "They own the whole country." The idea of taxing the people of the State to bring purchasers or tenants for these lands is very cool, to say the least.

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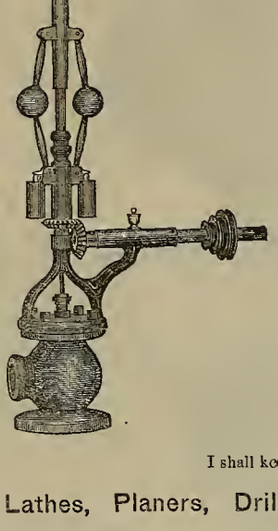

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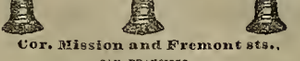

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SAN FRANCISCO, SATURDAY, DECEMBER 4, 1869.

VOLUME XIX. Number 23.

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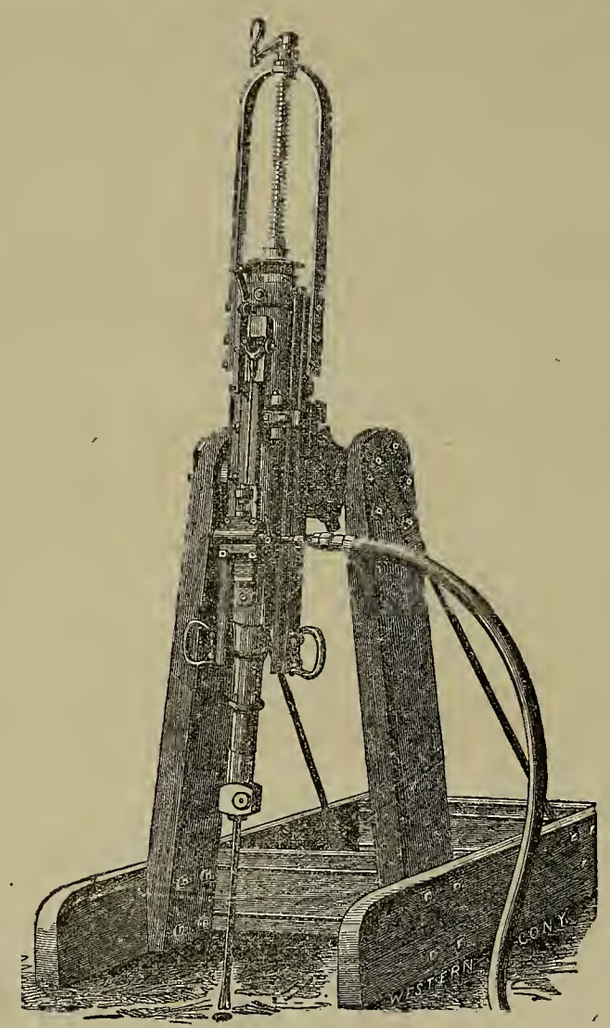
Burleigh's Pneumatic Rock-Drill.

The saving of labor and the consequent saving of expense is not the principal advantage of many new inventions. The saving of time is often of much greater importance. In some localities—in New York City, for instance—it takes months to blast away the rocks, which not only occupy the space to be used for cellars and sewers, but often rise to the height of thirty or forty feet above the level of the ground. With the assistance of the drill, which is the subject of this article, the same amount of rock may be removed in as many weeks, as months, by the old method, and that with a less number of workmen. This is, of course, of great importance in a city where the houses are occupied as soon as completed, and where impediment to travel by the building of sewers is a public loss to be avoided as much as possible.

The Burleigh drill has been in use for some three or four years in the Hoosac tunnel, Mass., and was described in the PRESS in 1868, since which time it has been much improved. When mounted singly they appear, in form, similar to a large heavy painter's easel, as shown in the accompanying illustration. The place for the picture upon the easel is occupied, in this case, by a cylinder and piston, which may be worked directly by means of steam, or by air compressed by the means of a steam engine placed at any distance required. For drilling in the open air, this steam boiler may be placed near the drill, and the steam employed at once; but for working in the shafts of mines or tunnels, it is more convenient to have the boiler outside, connected with an engine compressing the air. The air is then, by means of tubing, conducted to the drill. The small amount of loss, which is only about 15 per cent., occasioned by the use of this medium, as a means of transferring the power, is fully compensated for by the utility of the escaping air, for the purposes of cooling and ventilation. At the Hoosac tunnel, these drills have been in use for more than three years, and it is doubtful whether without their assistance this gigantic work could ever be accomplished. The boiler and engine for compressing the air are outside the tunnel, at a distance of one and a half miles from the point where the drills are worked. Eight of these are worked at one and the same time. The escaping air contributes greatly to the comfort of the laborers, and removes at once all gases, etc., that result from the blasting operations. The drill is attached directly to the piston-rod, with which it moves up and down, exactly on the principle of that class of steam-hammers. It may be made longer or shorter according to the necessities of the case. During the operation, which consists in striking the rock at the rate of from 150 to 250 blows per minute, the cylinder, piston, and drill are automatically advanced or lowered by means of a screw, in accordance with the amount the drill penetrates the rock, forward or downward, the drill being rotated at the same time.



BURLEIGH'S PNEUMATIC ROCK-DRILL

Five sizes of these drills are made, drilling holes from 1¼ to 5¼ inches in diameter; the sizes generally used are those from 1 to 2¼ inches. Thirty-six inches in depth can be drilled without a change of drill-points. We ought to add that in these drills, the steam required for each amounts to about three-horse power, with a pressure of fifty pounds to the square inch.

The Engineering and Mining Journal, in noticing this machine, mentions as follows: "It has been decided to use these drills in the work of removing the obstructions in Hell-Gate channel, New York. The idea is to work upon a plan similar to that employed at Chicago in working the tunnel underneath the lake for providing water for the city, only in place of the clay which there forms the bottom of Lake Michigan, and which can be cut, as it were, like cheese, we have all rock to be excavated. Near the shore, a large coffer-dam or caisson is being sunk, and the soil removed until the rock is reached. Then the boring and blasting will commence, and go on until a sufficient depth has been reached, whereupon the process of tunneling under the rocky bottom of Hell-Gate will commence by means of the Burleigh drill. After the middle of the proposed channel has been reached, ramifications will be made in different directions, blasting material will be placed in the main tunnel and all its branches, and all of it exploded at once. It is expected that the whole reef will be scattered and fall into the deep recesses adjoining, clearing a channel of at least twenty-five feet depth of water, so that even the Great Eastern would be able to enter New York harbor by way of Hell-Gate, as well as by Sandy Hook. We ought to add that the above-mentioned plan is that of General Newton, the accomplished United States Engineer in charge of the improvements."

Mr. A. W. Von Schmidt claims to be the originator of this idea, as set forth in his plan for the removal of Blossom Rock in our own harbor, and accepted by the Department.

The Burleigh rock-drill is now in successful operation in New York, Chicago, Jersey City; also at the Hoosac Tunnel (Mass.), Lake Superior, and Nova Scotia mines, Union Pacific and Boston & Hartford Railroads; also in deepening the beds of the Illinois and Michigan Canals, and Des Moines Rapids, and numerous other localities. Our leading mining companies will do well to examine the merits of these machines for use in their mines at an early day.

The patent rights for the Drill and Air Compresser for the States of California, Nevada and Oregon, are represented by William M. Greenwood, San Francisco, to whom communications on the subject may be addressed.

Nitro-Glycerine Explosion.

The recent explosion of 1,300 pounds of nitro-glycerine at the Giant Powder Manufactory, near this city, of which mention was made in our last issue, proves to be the severest which has occurred upon this coast. Three persons were killed—Mr. Bussenius, the Superintendent, a teamster named Cook, and a Chinaman. Mr. Wallerweiller, Assistant Superintendent, and five Chinamen were severely wounded. The grounds on which these works stand comprise about an acre of land, which is enclosed by a board fence. There were five buildings in the enclosure, every one of which was completely demolished; the fence boards were entirely blown off on all sides.

This disaster, and the fact that none of the giant powder contained in one of the demolished buildings was exploded, not only repeat the warning with regard to the manufacture and care of nitro-glycerine, but also shows most strikingly how very safe is giant powder when finally manufactured. The cause of the explosion is not positively known, as certified in the statement of the trustees, on page 364, who give further information of the accident.

INADVERTANTLY OMITTED.—The following, which has been handed to us, explains itself:

"EDS. M. AND S. PRESS:—Please insert the following award, which was inadvertantly omitted in the revised list furnished you: Mrs. H. G. Suplee, easy threading needle, silver medal. Respt'y,

A. S. HALLIDIE, Pres't.
GEORGE PARDY, Sec'y.
Mechanics' Institute, Dec. 2, 1869.

Communications.

Rebellious Ores and New Processes.

[Written for the Mining and Scientific Press.]

Editors Press:—We are continually hearing, through your columns and from other sources, of "rebellious ores" which cannot be worked, and of wonderful "new processes" which will extract all the precious metal, if not more, from any ore whatsoever. Electricity appears, just now, to be the favorite catch-word among "process men," who, like quack doctors, know well how to atuue their lay to the popular ear.

The cry of rebellious ores is, to miners, the consolator of despair; to a certain class metallurgists, the cloak of ignorance; among speculators in stocks, it is the excuse for worthless mines and barren ores; to buyers of ores in San Francisco, it is a source of great profit and of equal amusement; to the sensible and intelligent metallurgist it is, in most cases, simply *bosh*.

I firmly believe that there is not an ore of gold or silver in this country that caunot be worked to a reasonahle percentage—say 80 to 90 per cent. of common fire assay (which is way below the truth)—by some one of the known processes. The Sheba mine alone, of all that I have yet seen, furnishes au ore which is comparable, in point of refractory combinations, with those of Lower California, successfully worked hy the Triunfo and other companies.

Operations of Practical Men.

The usual course when au ore is to be worked is to send a rich sample to San Francisco, where it is treated by some metallurgical wiseacre of that city, usnally in an iron pan rich with the residues of former operations. I have known several hundred dollars per tou iu gold to be returned by oue of these concerus from a test (God save the mark!) of ore which contained uo gold worth speaking of.

Then an amalgamator, or smelter, is sent to the mine. If he he of the class of self-styled "practical" men—that is, ignorant of nearly all that he ought to kuow—he commonly adopts the pan process, in some of its many empirical forms. He puts in a little sulphuric acid, perhaps, and follows it immediately with a little carbonate of lime, or caustic potash, soda, etc., and points triumphantly to the ensuing effervescence as proof that "it is working," iu blissful ignorance of the resultiug compound. If one were to advise the use of sulphate of lime, or potash, or of glauber salt, the "practical man" would be very much amused.

One of this class ouce asked me why it was that he failed to he able to cupel a piece of *black lead*. Another objected to melting his gold in a black lead pot, because it gave him *lead in his gold!* They make nice distinction between sulphate of iron and sulphate of copper when used in an iron pan, and eschew muriatic acid while freely making use of sulphuric acid and salt. Well, if the ore is pretty facile, the "practical man" gets out about fifty or sixty per cent. of the silver, and considers himself successful. If uot, he fails.

The "Doctors."

Should he, however, be of the more pretentious class, especially if he be a *doctor*, he goes to work with a grand flourish of trumpets and a great outlay of (other peoples') money on some "new process," of course of his own devising, and equally, of course, utterly absurd and impracticable, even if theoretically correct. *His* failure is a foregoue conclusion, without ifs or buts; and one fine day he goes to San Francisco "on business," and fails to come back. His "works" are sold at a loss; the smokeless chimney becomes a landmark for travelers and a warning beacon to capitalists. He pockets his salary and goes to work on another new process. His employer's pocket their loss, and pronounce the mines a failure. The disappointed but not daunted miner shoulders his pick and goes prospecting for "gold rock" or for silver ores which can be worked; the storekeeper foots up his bad bills, and all shake their heads and say the mines are rich, but the ores are "very rebellious." The village, or "city," once so lively, becomes more desolate than the desert from which it sprung. If, hy chance, a metallurgist who does know his business is employed, the chances are that he is so cramped by the meanness or stupidity of the Grand and Sublime Muddlehead G. & S. M. Co. he works for, that he can do nothing, and either retires in disgnst or is kicked out with a damaged reputation. This is a true picture of what has happened in dozens of instauces.

Examples.

In Cerro Gordo, the ores were "very rebellious," and the smelting furnaces would not "stand" until one with capital and commou sense went there and proved the contrary. Hot Springs has been blasted, and San Francisco ore-hnyers enriched, by tue cry of "rebellious ores." But that day has passed here, I think. At Grass Valley, the sulphurets of the Eureka mine became all at once so "rebellious" that the local "sulphuret men" could do nothing with them until Deetken—whose attention was drawu to the snbject by a letter of the present writer's in the M. & S. Press—went there, aud solved the problem. Meadow Lake and Arizona are still under the han of "rebellious ores" and the cursc of "new processes."

A "New Era."

But now, for the hundredth time, a new era has dawued. The metallurgy of gold and silver is to be "revolutionized;" and Dr. Rae, Snperintendent of the Desulphurizing Electro-Mining Co., of Syracuse, N. Y., and Empire City, Colorado, is the long-looked-for metallurgical Messiah. He has already worked seven hundred pounds of horribly rebellious ores.

Down on your knees, ye stiff-necked, unbelieviug miners, and clasp your grateful hauds, ye despairing capitalists, for the day of deliverance is at hand! Hide your diminished heads, practical men and professors, and let the Hagau furuace pale its ineffectual fire, for behold, a greater than you cometh;—one who is prepared to extract "all the gold or silver from the most refractory ores" by "a very simple and economical process," which "covers the application of electricity, or magnetism, in any mode in which it has hitherto been or *may hereafter* be applied." That is to say, our sapient Patent Office has granted a patent to Dr. Rae for the application of electricity in modes in which it was applied before Dr. Rae ever thought about it, aud has also granted patents to other parties for modes which were already covered by Dr. Rae's pateut! The fact is, the Patent Office aud the public are being most egregiously humbugged in the matter of new processes.

Chemistry of Amalgamation.

I call upon the examiners to note this: The Mexican patio process depends for its efficacy ou the preseuce of "magistral" (which is simply impure sulphate of copper) and salt. These make chloride of copper; and this, with quicksilver, copper or silver, makes subchloride or dichloride of copper, or cuprous chloride; it is all the same. It is this dichloride of copper which acts on the silver ore. The Mexican "fonda" process consists in boiling the ore pulp in a copper pau, with "magistral" and salt, quicksilver and mechanical agitation. Here again we have the same effect. The sulphate of copper and salt, as well as chloride of silver, whether previonsly existiug or formed in the process, make, with the copper of the pan, this same subchloride, or dichloride of copper, or cuprous chloride, or cupric dichloride, or by whatever other name our chemists, in the present transition state of chemical nomenclature, may choose to call the substance Cu^2 Cl.

Again, when bluestone and salt are used in iron pans, the contact of iron, of reduced copper, as well as of quicksilver, produces this same substance, which acts on the ore till it is itself destroyed hy the iron pan. Any patent, therefore, on the "use of dichloride of copper in amalgamation" is just so much waste paper.

Merits of Electrical Processes.

Aud these "electrical processes," in nine cases out of ten, are nothing more than the Mexican fonda process, inveuted two hundred years ago. Do they uot all use metallic copper and salt; and do they not all produce, in some way or other, tho substance Cn^2 Cl or dichloride of copper? Verily the pateutee of the "use" of that substance will have a goodly fortune if he can collect royalty of all who "produce" it in their operations on silver ores!

I am not an old fogy, and I believe that electricity may yet play a very important part in our metallurgy; but I also believe that the time is not yet come, and that the use, or hypothesis, of any other electricity than that necessarily involved in any chemical reaction, is, in any of the processcs now hefore us, all stuff and nonsense; either purely suppositious or quite superfluous. But I am open to conviction.

Method Pursued at Hot Spring.

I am now working the "rebellious" ores of the Blind Spring district, or Hot Spring, in Mono Couuty, to 80 to 95 per cent. of common fire assay, and my bullion is .940 @.970 fiue. I use the old Mexican fonda process, with such improvements, looking to economy, as are suggested to me by a slight knowledge of metallic chemistry.

Nothing Refractory and Nothing New.

I will close hy reiterating my conviction that there is no ore of gold and silver, on this coast or elsewhere, that will not yield to the intelligent application of some one of the known processes; and further, that no important discovery or invention in metallurgy, at least other than purely mechanical, has been yet made, or may be looked for, for some time in this country. If there is au exception, it is probahly Kustel's combinatiou of Plattner's gold process with Patera's silver process.

Chas. H. Aaron.

Moutgomery, Nev., Nov. 14, 1869.

"Common Sense."

[Written for the Mining and Scientific Press.]

C. T. Hopkins, Esq., President *pro tem.* of the "Immigrant Uniou," has written a pamphlet of sixty-four pages, to which he has affixed the title of "Common Sense Applied to the Immigrant Question." The Union over which he presides, have "ordered 10,000 copies of this Common Sense to he printed aud distributed throughout the States."

The avowed object of the Uuion is to attract the attention of the people of the Atlantic States and of Europe to the immense resources of California, and the inducements they present to those who desire to migrate in search of a new home, with the view to improve their conditiou.

The object of Mr. Hopkius is two-fold,—first, to secure material aid from the public and from the Legislatnre, in the shape of subscriptions and appropriations; secondly,—to make known abroad our resources, etc., with tho view to secure the desired population. Had his object been the reverse of all this, we think he could not have secured it more effectually thau he will by a dissemination of his "Common Sense."

We believe Mr. Hopkins to be siucere in his convictions, that mining for the precious metals, as a branch of industry, is no longer profitable; and that it should be shunned as a demoralizing curse to the community. At the same time, we believe Mr. Hopkins to be so thoroughly imhued with prejudice against mining, as to disqualify him from drawing a faithful picture of our resources—the chief of which is, and will long continue to be, mining! As au evidenco of that prejudice, we refer to the speech made by him at the hanquet given hy the Chamber of Commerce two years ago, —which was published in the *Alta*, and uoticed in the Scientific Press.

It was the mineral resources of this country which brought most of us to these shores, and it will he the mineral resources which will cause most of those who, for generations to come, will follow us.

The prosperity of the farmer and of the manufacturer are due to the mines; the mines built San Francisco, and have created our fleets of inland and ocean steamers, and have caused the construction of every mile of railroad throughout the State.

To the mines do the rich men of Califoruia directly or indirectly owe their wealth. To the mines do the mechanic and laborer owe the high rate of wages they have so loug enjoyed, and from which they have accumulated millions of savings to disburse again in the shape of assessments upon "feet," or in monthly instalments to pay for homestead lots, for which they have no use—disbursements made more frequently to enrich others than themselves.

To the mines are our land lords indehted for the high rents they have so long enjoyed,—whether those reuts were derived from city property or farm lands. We ask Mr. Hopkins to point out where one hundred thousand dollars—the result of profit from farming—have been invested in San Francisco; and we will show him a million against it from the mines.

Mr. Hopkins shows the product of bullion from the "Comstock" for four years, or rather 3¾ years, to have been $31,038,190, and the dividends over assessments to have heen $3,616,250; and then, after a grand flourish, says: "The owners of the mines would have made $3,616,250, clear profit, if they had not in the meantime lost $9,601,800 hy depreciatiou of the stocks!"

If Mr. Hopkius knows anything about the Comstock mines, to which he refers, he ought to kuow that notwithstanding all the waste and extravagance attending their management, they have returned thousands of dollars for hnndreds expended to develop and work them. This he can ascertain by referring to the reports of Messrs. Ross Browne, Raymond and others. Then let him add to the profits of the mines, the profits of the Union Mill Company, composed of some half dozen men, mostly in San Francisco, who own or control upwards of twenty mills, which are kept constantly employed upon the reduction of ore from the Comstock mines, for which they obtain $13 a ton; while other mills, owued outside of the combination, would be glad to do the same work for $10 a ton. These profits would make a material difference to both assessments and dividends. While Mr. Hopkins was engaged in the collectiou of statistics in regard to mines, why did he not refer to the reports of Messrs. Ross Browne and Raymond for statistics in relation to some of the incorporated companies of California, such as the Amador, the Eureka, the Idaho, and others, which are held for investment and managed in the interest of the owners, with the view to profit aud not for speculation. We ask Mr. Hopkins to go hack eleven years, to the condition of San Francisco when the Frazer river excitement broke out, which gave a shock more severe than that of the severest earthquake—followed hy the discovery of silver, which was the turning point in the career and prosperity of the city of San Francisco.

Mr. Hopkins estimates the population of California at 500,000, and the annual consumption of farm produce, for each individual, at $100, makiug au aggregate of $50,000,000. He does not say whether this estimate is hased upon the value of the produce upon the ground, or whether it includes the cost to remove, with commission and profits of jobber and retailer. In one case it would lessen the value of farm produce; in the other, increase the expenditure of the consumer upwards of 50 per cent.

He then adds the amount of *exports* of farm produce, estimated at $16,000,000, which, with the $50,000,000 before mentioued, make $66,000,000. Then compare it with the production of mines—$23,809,057.

He appears to lameut that the farmer must feed our whole population, and a portion of our dependencies, before a single shipload can be spared for export. He tells us how many acres are under fence, and the value of their produce, and then estimates the value of the produce of 40,000,000 of acres; but has failed to furnish the particular information wbich would be of most interest and value to those who would he likely to come here to engage in farming, viz: The price of land in the various couuties, accessible to market; the cost to plow, seed and reap per acre; the yield of the various cereals; the cost to thrash, and hag, with the freight and commission to the nearest shipping point, with all charges.

Such dates would enable others to judge whether wheat, etc., can be raised to profit, at present prices, not likely to be increased hy au increased production. Then if Mr. Hopkins would collect statistics as to the manufactures to show the percentage consumed in the mines compared with that of the agricultural counties, he would give some insight into the merits of that branch of industry. In conclusion, we believe the resources of the State to be beyond the estimate of Mr. Hopkins; at the same time we believe that he must be content, for very many years to come, to see the mining interest of our State at the "head," instead of the "foot," of our industrial resources. C. M.

Mechanical Progress.

The Westernhaus Brake.

This operates by compressed air, and upon the whole length of the train at once. As described in the *U. S. Railroad Register:*—"A vertical steam cylinder (10-inch diameter, 10-inch stroke) fastened to the side of the locomotive, drives an air-pump of the same size, and fills a strong reservoir of boiler plate, beneath the platform, with air condensed to a pressure of 100 lbs. to the inch. The reserve of condensed air is always at the engineer's command. A second gauge, placed above his steam-gauge, indicates to him what the pressure of the air in his reservoir is at any moment. The steam cylinder, communicating directly with the boiler, will pump away until the pressure in the air reservoir rises nearly to the pressure of the steam which drives it, and then stops. When the engineer uses a portion of the air to break the train, the pump goes to work again of its own accord; and if there be a leak anywhere, the steam cylinder will feel it and keep at work, just enough to keep the pressure up to par.

Every car has beneath it a gas-pipe one inch in diameter, running from one end to the other. At each end of this pipe a short piece of india-rubber hose terminates in a brass tube, with a valve in it, to prevent the *exit* of air. Coupling any two cars, you couple also two of these tubes, by sliding one inside the other. Under the middle of each car is a ten-inch cylinder with piston-head, and piston-rod, and a branch to the long gas-pipe. Its piston-rod is directly connected with the wheel-brakes, and presses them against the wheels with the force of the compressed air in the reservoir, which can be let on slowly or instantaneously or continuously, as the engine driver sees proper to do it."

Pressure of Steam not the Cause of Boiler Explosion.

A. T. Hay has written to the Chicago *Railway Review* upon this subject, since the explosion at the Indianapolis Fair-grounds. He says the generally held notion is erroneous; and that chemical action of some kind, produced by the impurities contained in the water used, is undoubtedly the cause of most boiler explosions. We quote portions of his communication:

"Hundreds of old boilers are run with their maximum of steam until their outer shells are so corroded and worn away by *oxidation* that you can drive a punch or even stick a jack-knife through the iron. A passenger engine on the Baltimore and Ohio Railroad, at Columbus, came out of the round house in a leaky condition. The jacket was removed, and the bottom of the boiler was found to be in such a condition that with one blow a hammer could drive a punch through it; and yet that engine had been making her regular trip, carrying 120 pounds pressure. And hundreds of boilers are condemned every year under similar circumstances; that is, they simply let the steam and water out at the weakest place, no particular damage being done, nobody hurt, and no explosion reported. These facts rather shake the bad iron theory.

Many even of the best, heavy, new 5-16 iron boilers explode with terrific force, tearing through solid iron, leaving the seams or joints unbroken, with a full gauge of water and at a low or medium gauge of steam. At the Pennsylvania Iron works, Danville, Pa., in 1867, a new cylinder boiler connected with 30 other boilers by large steam pipes, exploded with a full gauge of water 20 minutes after the fire under it had been extinguished, and while the fireman was putting in a new grate bar,—killing seven men, and tearing the iron like pasteboard.

In 1860 the propeller Globe exploded her boiler in the port of Chicago, seven hours after her arrival, when her fires had cooled down, and the steam gauge only showed 10 pounds pressure,—utterly destroying the boat and cargo.

In Cincinnati, Nov. 3, 1868, a saponifying tank used for the separation of the glycerine from the fatty acids contained in tallow and other fats, by means of steam taken from a boiler carrying from 85 to 90 pounds pressure, exploded, throwing the wreck two squares.

Water used for steam purposes usually contains more or less mineral matter in solution and organic matter in suspension, and a rise of temperature up to boiling point is favorable to chemical action.

Now take water for steam containing mineral bases combined with their acids, animal fat and other organic substances. The fats or oils will act chemically on the steam, forming fatty acids and glycerine, while the organic matters liberate nitrogen. That glycerine is a base, and combines chemically with nitric and sulphuric acids is well known. The glycerine will combine with its due proportions of acids, and having a greater specific gravity than water will gravitate to the bottom of the boiler, where it will remain harmless, so long as the temperature of the iron is below 360° Fahrenheit. This degree can only be reached under ordinary circumstances, by the sudden lowering of the temperature of the steam or water; which will give sudden rise to the temperature of the iron, and the thicker the iron the hotter it will get, and the more liable we are to have terrible explosions.

Why all writers ignore chemical action within a steam boiler, with all the evidence of corroded iron, and the deposit upon the inside of the boiler of incrustations is more than I can account for. I have examined hundreds of boilers, and made up my mind years ago, that engineers, as a general thing, are no more responsible for those terrible disasters than we are for the effects of a tornado at sea. And, in conclusion, let me say, I have seen, *in two instances, a substance resembling coal-tar and earthy matter came out of boilers, that was about as explosive in the open air as gunpowder.*"

HÆMATOXYLIN IN PHOTOGRAPHY.—Logwood contains a crystalline matter, termed hæmatoxylin, which is prepared from the powdered extract by digesting with ether. The liquid is distilled and mixed with water; and in a few days hæmatoxylin is deposited in crystals. The extract of logwood treated in this way yields from ¼ to 1.10 of its weight of this substance. The fact that hæmatoxylin reduces salts of silver and turns red in the sunlight suggested its application in photography, and the experiment has recently been tried in St. Petersburg by Dr. Tabensky. Two plates were sensitized and exposed in the usual way, The one was developed with pyrogallic acid, the other with a solution of hæmatoxylin. The result was equally good in both cases. Dr. Tabensky found the following mixture to work well: 0.5 parts hæmatoxylin, 80 parts distilled water, 22 parts acetic acid of 33°. A little glycerine improved the developer.—*Journal of Applied Chemistry.*

WELDABLE IRON.—Mr. E. Williams read a paper before the Iron and Steel Institute at Middleborough upon the manufacture of rails, in the course of which he said that the severe tests of rails, by heavy falling weights, necessitates the use of iron that welds with difficulty, and therefore does not make the best rail for wear. He adds: "On this subject I have thought and experimented much, and I am satisfied that a fibrous nature and weldability do not go together, and that only well puddled, crystalline iron welds easily, and, therefore, with moderate certainty. Given any kind of wrought iron, it welds more easily in its first stage, that of puddled bar, than at any future one; and the effect of roughing it down, that is, of extra piling and rolling, is always to diminish the weldability of the resulting rail piles. Those who make cable bolts, best boiler plates, and other similar iron, know how certainly they are spoiled if they are worked hot—in other words, if they are welding hot."

CHUCKS.—The "scroll" or "universal chuck" should have only three jaws. "Articles to be chucked are seldom near enough of a size in two directions to engage four jaws equally. If the article is not a true circle, three jaws will always hold with an equal bearing. For circular central work, such as blank gears, wheels, small pulleys, and all circular pieces which need a true central hole, the scroll chuck for accuracy and expedition has no rival, but it should have only three jaws. The chuck best entitled to be designated 'universal' is the independent jaw chuck, the jaws of which are operated by a steel screw. These chucks have four jaws, which operate independently of each other. Articles of great variety of shape may be held in this chuck as well as circular, eccentric and one-sided pieces, and they hold the article much firmer than the scroll chuck, and hence they are much better adapted to solid work."—*Cor. of Amer. Railway Times,*

Scientific Progress.

Zoic Theory of Chemical Geogony.

Prof. Henry Wertz read a paper before the American Association at Salem in which he enunciated an original theory, viz.: that life is, and has always been, the governing influence in all chemical changes that ever occurred or will occur; and that the prozoic atmosphere contained very little or no free oxygen, but consisted essentially of carbonic acid, nitrogen and aqueous vapor, while at the same time the constituents of the ocean were at their maximum of oxidation. We quote a few paragraphs, more or less condensed:

"What is our only source of oxygen at present? Evidently the decomposition of carbonic acid by solar force, through the influence of plant vitality—a never ceasing agency which has continued to increase the proportion of oxygen and diminish that of carbonic acid in the air since plants began to grow upon the earth. * * * To the objection that in the earliest sediments we find little organic, or even carbonaceous matter, I reply that (apart from the graphites and sulphides, both believed organic in origin,) it is easily understood that while life might withstand the ferric compounds, dead organic matter would quickly be burned up thereby, the sulphides having indeed resulted from this very burning process; the original oceanic metallic sulphates, which are now extant as sulphides, having given up their oxygen to the atmosphere by this indirect process of reduction by dead organic matter. I may add, that there has been still another source of oxygen, freed through vital influences: that oxygen which represents the proportion deficient in bituminous coals to form water with the hydrogen. This represents of course oxygen which has at first been merely transferred from hydrogen to carbon; but as the carbonic acid, once formed, is again decomposed and its oxygen set free, it amounts to the same thing. * * The notion that ferric solutions are inimical to life, is not supported by evidence, although *ferrous* solutions are so, without doubt. * * It has been claimed that subærial action of carbonic acid, on alkaline and earthly silicates, would introduce into the ocean enough of bicarbonates to render it neutral, or even alkaline, and to precipitate all ferric oxides and hydrates. No doubt this took place *locally*, and the iron ore beds of these rocks are thus (and I believe thus only) to be accounted for. We have thus actually a prop to my theory. Still, to bring the whole of the ocean to a neutral or alkaline condition must have required time enough for the deposition of the whole mass of the Eozoic schists, if not of a portion of the Palæozoic. The formation of gold veins has occurred throughout all time, and is even now going on, by virtue of the same agencies that I was the first to discover in 1858; the alternate formation, by oxidation, from auriferous pyrites, of ferric solutions of gold, and their reduction to ferrous conditions again, by further reactions with unaltered pyrites or with organic matter. * * From the above it will be seen that my reasonings have led me to believe that, in Prozoic times, all the oxygen of the earth which now enters into the processes and changes going on upon its surface, all the *potential* oxygen of the earth (so to speak) was locked up in combined forms and divided between the earth's hydrosphere and its aërosphere; combined chiefly with iron in the former and with carbon in the latter."

WHY STRETCHED RUBBER CONTRACTS WHEN HEATED.—This occurs within a certain range of temperature, owing to the presence in it of vesicles containing aeriform matter. When the rubber is stretched, these vesicles are elongated; and when heated, their tendency to resume the spherical form tends to the lateral expansion, and consequently to the longitudinal shortening, of the stretched material.

CITRIC ACID IN TOMATOES.—Prof. Silvestri of the University of Catana has found an abundant source of citric acid in the plant *Tomato de la Paz.* This belongs to the family of the *Solanaceæ*, is about twelve feet high, and contains one and a half per cent. of citric acid. He has also found it in the common tomato, and it probably exists in all the plants of the family.

Manufacture of Chlorine.

Mr. Walter Weldon read a paper at a late meeting of the British Association, upon the manufacture of chlorine by the means of perpetually regenerated manganite of calcium. He claims not only to have produced a new compound, but to have reduced, by fully eighty per cent., the cost of the principal item in the manufacture of chlorine, and also to have made such manufacture possible without the production of any offensive residue. He thus describes his process: "The liquor which remains after a charge of manganite has re-acted upon hydrochloric acid in any suitable still is run into a receptacle, in which it is treated with carbonate of lime, to neutralize any free acid, and to decompose any sesquichloride of iron or of aluminium which may be contained in it. It is then pumped up into an elevated cistern, in which it is left at rest for a few hours in order that it may deposit solid matters in suspension. The most abundant of these is usually sulphate of calcium; but there are also small quantities of sesquioxide of iron, and larger or smaller quantities of alumina and silica. These impurities having deposited, the supernatant liquor, which is a mixed solution of chloride of manganese and chloride of calcium, and is now quite clear and of a beautiful rose color, is run off into another vessel, where there is added to it the quantity of lime necessary to decompose the chloride of manganese in it, and nearly an equivalent more. A blast of air is then injected; and what was at first a perfectly white mud, all the manganese in which was in the state of MnO, soon becomes a very black mud, nearly all the manganese in which is in the state of MnO_2. This is then allowed to settle for twelve hours, at the end of which time it has separated into a denser black mud and a supernatant clear solution of chloride of calcium. This having been drawn off, what remains is ready for use in the still. It is used as mud, without drying, being conveyed to the still by pipes and entering by a hydraulic lute. In the still it meets with hydrochloric acid, from which it liberates chlorine, at the same time reproducing exactly such a residual solution as was commenced with. With this solution the round of operations is recommenced; and so on, over and over again, continually."

WERE THE TWO OCEANS ONCE CONNECTED AT DARIEN?—Some geologists have attempted to account for certain climatic phenomena in Europe, by supposing a former depression at the Isthmus, sufficient to allow the Gulf Stream to have flowed into the Pacific. A comparison of the Coral Faunæ of the two coasts at that point results in the discovery of the fact,—says Professor Verrill,—that no species are found to be identical, while even the genera and families show remarkable contrasts. * * * "We may legitimately conclude that no very extensive or deep connection, sufficient to alter the course of oceanic currents, can have existed since the coasts have been inhabited by the existing species, otherwise a greater admixture must have taken place. A narrow or shallow channel of communication would probably account for all identical species yet observed; but at what period it may have existed is still another question."

THE COLORS DIFFERENTLY DISTINGUISHABLE.—Bright yellow is the color most easily distinguished, and violet and red the least. Blue comes next to yellow. In singular conformity to this is the fact, that if a spectrum be projected through a slit in paper surrounding a basin of water containing water fleas, the greater number of the insects collect in that part of the water illuminated by the orange yellow rays, and the fewest in the line of the violet, which would seem to indicate that they too most readily perceive yellow light.

OCCLUSION OF HYDROGEN BY NICKEL.—M. Raoult finds the small cubes of nickel, such as we find in commerce, to be in an eminent degree porous, and to have, like palladium, the power of absorbing hydrogen. One cube of metal will occlude 165 times its volume of gas. It appears that once hammered, the metal loses its porosity and powers of absorption.

Farming and Gardening.

Communications for this department are solicited from all parts of the Pacific States and Territories.

Sorghum Culture.

A greatly increased interest appears to be manifested of late at the East, in the culture of sorghum, or the Chinese sugar cane, and its value as a farm crop is now quite generally admitted. This advance is due in part, to the introduction of improved facilities for the manufacture of the syrup, hy which the enterprise devoted to the crop is more fully rewarded, and largely to the high prices caused by the political disturbances iu Cuha aud the failing of our crop iu Louisiana; but the great underlyiug cause of high prices may be referred to the natural increase in consumption of sugar, and the growing disproportion hetween the supply and the demand. This alone is sufficieut to prevent sugar from declining to the old prices, until some new and more productive source of the article shall he developed. Sweets of all kinds must rule high iu price for some years to come, at least.

A number of enterprising farmers located in the San Felipe Valley, Monterey oonnty, have recently undertaken the experiment of raising "sorgo." Some 45 acres have heen harvested with most satisfactory results. The cane has been produced at the instigation of Mr. J. H. Purdy, who, being provided with all the necessary machinery, has been experimenting in the production of sorgo syrup for the last two years. His experiments, last year, were a failure through the incompetency or neglect of the party to whose care they were committed. This year he has met with good success.

As far as the manufacture has progressed, the production has been 400 gallons to the acre. It is thought that it will average 350, or about double what the sorgo grown in the Eastern States—in Ohio, for instance—produces. It is believed the cultivation of this plant will yet prove very remunerative in situations where the heat and length of season are sufficient for its growth up to a full maturity.

We have seeu samples of this syrup, which is of a light amber color, and compares favorably with the syrups manufactured at the refiueries in this city. It was manufactured by Mr. George X. Collins, hy the new Weller & Hatcher process. It ought to retail readily, in this city, at 75 cents per gallon, or ahout $120 per acre for the farmer's share, in addition to about 40 hushels of seed to the acre, worth at this time about six cents per pound for seed. This is more profitable than raising wheat at $1 per cental, or barley at 75 ceuts, which are ahout the current rates for these grains paid to the farmer.

How to Utilize Smutted Wheat.—The Willamette *Farmer* says that smutted wheat can be made iuto good and wholesome flour by adding one quart of finely-pulverized air-slacked lime to each eight bushel of grain, and thoroughly mixing it hefore it is passed through the cleaning apparatus of the grist mill previous to grinding. The lime seems to cut the smut which adheres to the fuzzy end of the wheat, and is blown out with other dust and dirt. If this is a fact, it is new to us, and is well worth the attention of the farming community everywhere.

Oats in Oregon.—A telegram to the *Bulletin* of this city, a few days since, says the merchants of Walla Walla complain that they cauot get hold of enough oats to supply the local demand. Two and a half cents per pound is offered. The late warm rains in that vicinity have started grass, which is growing finely. The hills and valleys are remarkably green for this season of the year.

Advantages of Good Cultivation.

Liebig states that the farming lands of Hesse iucreased 300 per cent. in value in fifteen years, simply on account of improved culture, introduced through scientific investigation and experimeut.

It is well known that the yield of sugar in the Island of Mauritius gradually fell off, from its large original yield, to 2,000 pounds per acre. Laudowners were not slow to perceive that their estates were fast being ruined by improvident culture without rotation of crops. An improved system of cultivation was introduced a few years ago, including a free use of guano, and the result has been that the yield of sugar has been increased to 6,000 pounds per acre. The soil of the island is very rough, and obstinate, so much so that it is worked almost exclusively with the hoe, and other hand implements. Bad culture has so impoverished the sugar lands of Lousiana that they have fallen off to 1,000 pounds per acre, according to reports two years ago; although the reports of the Agricultural Bureau at Washingtou for the present year set down the yield at 1,500 pounds.

It is claimed that the saving of grain iu the United States by the introduction of the recently improved thrashing machines (which are computed to be about 230,000 in number) is fully $10,000,000 over what could be realized were our present crop to be thrashed by the old-fashioned flail.

Farmers sometimes poh-poh at "scientific farming," and the introduction of "new-fangled machinery." Will such people tell us what we should do without the farming machinery introduced by the present generation? What would be the conditiou of our lands without the use of mineral manures—the direct results of "scientific farming?" They would be as desolate as the plains of Babylon or the hills of Judea, once the garden spots of earth; but now, through lack of scientific farming, abaudoned to wild beasts.

The wheat lands of the Middle States have fallen off in the yield of wheat from an average of forty to fifty bushels per acre, to one of ten or twelve, through lack of proper culture. The older lauds of California will not produce to-day more than half as much as they did fifteen years ago; while the plains of Egypt are as fertile now as they were in the days of the Pharaohs, for the only reason that the waste of crops is supplied hy an annual source of fertilizing material from the overflowiug waters of the Nile.

Soap Suds.

The value of this article as a stimulant of vegetable life cannot be too highly appreciated. It contains the aliments of plants in a state of ready solution, and when applied acts not only with immediate and obvious effect, but with a sustained euergy which pertains to but few even of the most concentrated manures. The proper way to utilize this material is to cause its absorption in a compost heap. Muck, loam or stable compost should he deposited where the drainage from the sink and laundry, may find its way to them and he absorbed for the benefit of the crops. In this way several loads of most excellent manure, suitable for the support and sustenance of any crop, might be made at comparatively small expeuse. The highly putrescent character of this fermentable liquid qualifies it admirahly for the irrigation of compost heaps of whatever material composed. Being a potent fertilizer, it must, of necessity, impart additional richness to almost auy material to which it may he added. Try it, and mark the result.

Importing Weeds.—The Willamette *Farmer* complains that several new varieties of weeds have heen introduced into Oregon iu packages of seeds sent from the Department of Agriculture.

The Beet Sugar Movement.

The *Bee* says that the Sacramento Beet Sugar Association have on hand about 200 tons of sugar beets, raised upon their own farm, for the purpose of experimenting in that hranch of industry. Their machinery for sugar manufacture was to have been set in motion the past week. If it proves profitable, the Association will enter largely into the business the coming seasou, and other refineries will he erected in many places; hut if the experiment fails, then it is not likely to be tried again for years to come.

No opinion as to the probable result can he given. The test must he awaited. We only know that the beets can be raised here cheaper than in Europe; but the question to he solved is, how much eugar will they produce per acre or per ton? When we know that, we know all, and until we know it we can know nothing valuable concerning this interest. The result is awaited with auxiety, but with confidence.

It may surprise many to learn, what is nevertheless a fact, that fully one-third of the whole amount of sugar consumed in the world is mauufactured from beets. While the soil needed for the sugar beet is quite different from that best suited to the grape, the climate required for the two is identical—warm and dry. Much money has been lost in attempting to cultivate the sugar beet in the moist climate of Englaud. Efforts in this direction have now been abandoned; yet immense quantities of the raw beet sugar of Germany and France are imported into the British Islands from their refineries, competiug very successfully with the cane sugar from their own colonies. The successful iutroduction of the business into this State would establish a large and important branch of agricultural industry. Hence the anxiety with which the results of the experiment at Sacramento are awaited. It is known that the beet in California secretes about two per cent. more of saccharine matter than it does in the best localities in Continental Europe, and every condition here seems favorable.

Improved Cotton Culture.

The system of field labor which has heretofore obtained at the South, has not heen at all favorable to experimeutal culture; hut with the renewal of industry there, under more favorable auspices, more attention is very geuerally being paid to improved cultivation. More care is heing taken to keep the lands in good condition, hy the use of manures and rotation in crops; and more attention is being devoted to diversified agriculture. One of the most interesting experimeuts in the way of improved culture, which we have noticed, is that of Col. G. B. Lockett, of Georgia, who has beeu making an experiment this year of "high" culture in cottou, which will he worth much as an example to the planters of the South. He put in six acres of cottou, with the desigu of making their product equal to that of seventy-two acres cultivated in the usual careless, superficial manner.

The average yield of cotton on Georgia lands is about a quarter of a bale of lint to the acre—or, a bale to every four acres. Col. Lockett aimed to gather three bales from each of his six acres, and the Albany (Ga.) *News* says that he will come pretty near doiug it. His land was richly manured, carefnlly, deeply and minutely cultivated and kept in the best order; and the result is that notwithstanding the severe drouth in Georgia, which interfered materially with the experiment, he has a splendid crop. It is estimated that he will gather seveuteen bales, of 500 pouuds each, from the six acres. This will be worth, if only of ordiuary quality, $2,125; but as the manure and careful cultivation will have made the staple of unusual length, and fineness, it is estimated that it will sell for thirty-five cents per pound, or $2,975 for the whole—making the richest yield of six acres ever witnessed in cotton culture in the South.

A Horticultural Experiment.

The Bucyrus (Ohio) *Journal* invites attention to a very singular and interesting experiment recently performed in that place. A lady was told that if, on the 1st of August, she should pick from a young lilac its entire foliage, the tree would forthwith not only put forth new foliage, but hlossoms also. The experiment was tried, and the results were as predicted.

Such phenomena are not uncommon; and are explained on the well known principle that a tree when so wouuded as to threaten its existence, immediately directs all its energies to develop flower or seed buds, as if in that way to secure the perpetuation of its kind. This is often done when a tree is so wouuded that its next winter or period of rest proves its last. This peculiarity was strongly exemplified in the actiou of the fruit orchard mentioned in these columns three weeks ago, the trees of which, after being maliciously girdled, seemed to put forth renewed energy, and produced a most extraordinary crop of fruit (seeds). This effort appears to be accomplished at the expense of a severe drain upon the roots, which, if the wound has been very serious, is apt to eventuate in the death of the tree the next summer.

If pear and apple trees, after having made their spring growth, aud perfected their fruit buds for the ensuiug season, are subjected to a long period of severe drouth, followed by a period of moisture and warmth, they will often again break into fresh leaf and hloom. And in California especially, such fruit is generally perfected; but it is usually of small size. In the Northeastern States, the shortness of the season generally prevents the perfection of the second crop. The same effect is produced hy pulling the leaves off when the huds for the ensuing year are fully ripened.

A Boston Notion—Horticultural School.

It is reported that as soon as the uecessary funds are obtained, an institution is to he opened near Boston in the novel form of a *horticultural school for women*. We find the plan described as follows: It comprises a farm, containing ahout twenty acres, five acres to be used for the cultivation of small fruits, flowers, and salads, and such vegetables as are euitable for culture by female labor, the rest to be devoted to mowing and pasturage; a good plain dwelling house capable of accommodatiug about thirty inmates; a harn large enough for the farm stock, and an experimental plant house for growing flowers aud early vegetables, and the forwarding of plants for field crops, The control of the institution is to he vested in a president, secretary, treasurer, and twenty-four managers—one-half of whom will he ladies—who will be aided hy a competent instructor, an experienced farmer, and the necessary assistants. The pupils will be instructed in plain sewing, the use of the sewing machine, and in all kinds of housework, as well as in horticulture, and lecturers and teachers in kindred branches of labor and service will be employed from time to time.

It is intended to receive pupils to the number of twenty-five, who are from the age of sixteen upwards, of good character, fair education, and able to work as may he required. The course of instruction will extend through two years. The estimated cost of procuring the farm and outbuildings and maintaining the school for three years, is $30,000.

A Wonderful Plant.—A specimen of a remarkable plant—"The Flower of the Holy Ghost,"—has been successfully raised in Norwich, Conn. The flower is a creamy white cup, nearly as large as half an egg, and extremely beautiful, and its wonder as a natural floral growth is the fact that in this flower is a little pure white dove, with pink bill and eyes, and its head turned as if looking over its back. Its wings, feet, bill, etc., are as absolutely perfect as those of the living dove, whose counterpart this wonderful mimic bird is.

No Room for Flowers.

We pity the householder who says that he or she has no room for flowers. It is to be feared there is a desert in the heart of such a person. Not to love flowers is to be indifferent to one of the most beautifnl gifts of God to man. What, got a few square feet in a front or back yard, or even an empty window sill, and still "no room for flowers?" The writer has sometimes dwelt in straightensd quarters, with twelvo hours a day devoted to lahor; hut he never yet was in a place where he had no room for flowers, or saw the day when he had no time for their culture. It is true, a small city yard is but a poor place for a floral display; but *something* can always be grown and pleasure derivcd therefrom, wherever the sun shines, be it upon the open soil, a covered pavement or an elevated window sill. By the exercise of a little judgment and care, a very fair display of the treasures of the floral kingdom may be made in a front yard of only a few fcet depth.

The *Hearth and Home* speaks of a retired horticulturist, who had left his heautiful garden in the country and settled down upon the pavements in the city of New York. In the back yard of his residence, however, were to he seen the evidences of his old love for the beautiful, in hundreds of rare and handsome plants growing luxnriantly on a little patch, which comprised an extent of ground only equal to a bed five feet wide by thirty in length, and yet, says our coutemporary, "We will venture to say there was a greater variety of choice plants growing within this space than can he found in the gardens of nine-teuths of our wealthiest farmers, or in the suhurhan homes of our merchant princes. In a shady nook, ferns of a dozen or more species were unrolling their fronds, the hasement windows were screcned with morningglories, while roses and verhenas hloomed in the eunniest border, and low-growing lobelias and myrtles peeped out from underneath the taller-growing plants. A rustic vase held the following plants: *Coleus Verschaffeltii, Lysimachia nummularia, Maurandia Barclayana, Hedera helix, Cuphea platycentra, Convolvulus stellatus, Verbenas*, three varieties, and two sorts of creeping myrtle."

Does not this prove that "where there is a will there is a way" of accomplishing our object in floriculture? Blessed is he that has but little, but more hlessed is he that makss the most of what he has!

GETTING DRY.—The ground in many places is getting too dry and hard to plow. The grain upon the fallow and most of the other ground which has been sown is up and looking finely; but the farmers need more rain before they can proceed much further with their plowing and seeding. In some localities tho dry north winds are telling unfavorahly upon the young grass and grain. Many of the trees, especially in the foot hills, which were persuaded into premature hudding and blooming by the few days of warm southern winds, have gone back again, and will bide their time.

RANCH DESTROYED.—The Turner ranch of 700 acres, in Linda township, near Marysville, once considered one of the finest ranches for agricultural purposes in the Yuba bottom, has recently been sold for $500. It was covered with sand by the flood of 1862, since which timo it has become overgrown by willows and cottonwood, the growth of which for fuel is the only use to which the property can now be put.

FEED YOUR TREES.—Some of our fruitgrowers are complaining of a deterioration in fruit. This thing grows out of our California way of farming, without attending to the kecping up of the land. Trees require plaut food as well as corn, or potatoes, or wheat, and they will suffer without it, giving evidence of the lack in hoth the quantity and quality of the fruit.

Twenty Farms on Fire!

The rule in this State seems still to be to run our farms into harrenness. But few farmers look much beyond the present. They want all they cau get now; and they generally take it iu what they conceive to he the easicst way—leaving the future to take care of itself. There are notable exceptions, it is true; hut they are rare. The Oakland *Transcript*, under the above head, touches up some of our improvident farmers as follows:

At any time within 300 years, the Tycoon would have disemboweled any one, or more of his suhjects, who were guilty of euch agricultural incendiarism as the grain growers of California are in the hahit of committing every year. The intolligence and conscientiousuess of Japanese agriculturists, surpass that of Californians, immeasurably. A Japanese would as soon roh his wife's mother as roh his Mother Earth. There prevails in Japan a morality in agriculture which prohibits anyhody from impoverishing the soil. Ground which has yielded a crop, must he replenished with fertilizing agents hefore being taxed for another yield. In California, our grain growers *burn the straw*, return nothing to the soil, yet take a crop from it every year. One night last fall, we counted from the deck of ths ferryboat, twonty fires hurniug in Alameda eounty. Twonty piles of straw, representing an important product of farms. *Twenty farms on fire!* Wo call that agricultural incendiarism, and the result of such incendiarism, practiced for euccessive years, is well known in many parts of the Stato. Land that once produced sixty hushels of grain per aere, will not yield thirty now.

Hybridism in Fruits.

It has heen stated that there is some evidence to show that the character of one variety of the strawberry was effected hy growing iu the vicinity of other sorts. Hiram Walker, of Washington county, N. Y., who has practiced grafting since 1818, writes, that according to his experience, the same thing takes place with apples and other fruits, and he thinks the fact that some winter apples does not keep, is not due to their heing grafted on stocks of early varieties. He says he never knew any difficulty in keeping fruits where the orchard was all of one kind but that when early and late sorts were altogether, late fruit was rendered early, and early fruit made late, from cross impregnation. He mentioned a tree in Saratoga county which was in part grafted with a sweet variety, but the grafts bore sour apples for several years; the grafts of the eweet apples had been put into the lower limbs of a sour apple tree, and so long as the upper limbs of the original tree remained, the sweet grafts bore sour fruit, from blossoms being impregnated by those on the limbs above them; when the natural limhs were removed then sweet apples were produced. Mr. W. mentions other instances of a similar charactor which have fallen under his observation. The euhject is one not only of ecientific interest, but of actual importance to all fruit growers. It is within the observation of every one that a variety of fruit is not the same, eveu in widely separate localities. The differenco is by eome attrihuted to soil and exposure, by others to the character of the stock upon which the fruit is grafted, and now we have the influence of the pollen of our neighboring sorts charged with being the disturhing cause. Other observations on these pointe are needed.—*Utica Herald.*

MIGNONETTE TREES.—A correspondent of the London *Journal of Horticulture* gives a plan of growing miguonette as a little tree for the conservatory. He says: "Sow a pinch of seed in the center of as many three-inch pots as there are plants required. When the plants are strong euough, thin them by degrees to one plant in a pot, and that must bo the strongest. Train that up to a stake to the height required, pinch out all side-shoots and the heads of hloom, but do not divest the stem of its leaves until the plant has attained its full hcight. To form a head, about three are left at the top."

WHEAT IN COLORADO AND MONTANA.—The farmers of hoth Colorada aud Montana are highly gratified at the results of the wheat crops in their respectivo Territories. Forty bushels to the acre in the former, and fifty in the latter, of choice, plump grain, are not uncommon.

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, December 3, 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 50
Do. Superfine	4 00	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 10	@	1 55
Oats, ₱ 100 lbs	1 15	@	1 45
Barley, ₱ 100 lbs	90	@	1 15
Beans, ₱ 100 lbs	2 50	@	3 50
Potatoes, ₱ 100 lbs	75	@	1 00
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	6
Hogs, dressed, ₱ lb	9	@	10

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18½	@	19
Do Rio	18½	@	19
Tea, Japan, ₱ lb	75	@	90
Do Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Overland Butter	30	@	42½
Ranch Butter, ₱ lb	40	@	55
Isthmus Butter, ₱ lb	23	@	40
Cheese, California, ₱ lb	15	@	19
Eggs, ₱ dozen	45	@	50
Lard, ₱ lb	15	@	16
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb	60	@	75
do. pickled, ₱ lb	40	@	50
do. Oregon, ₱ lb	25	@	50
do. New York, ₱ lb	50	@	60
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	60	@	70
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	22	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	2	@	3
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	25	@	30
Soap, Pale and C. O		@	12
Soap, Castile, ₱ lb		@	20

DAY AND NIGHT WITH PLANTS.—Plants cannot he kept at the same temperature day aud night, and remain in health. In houses where plants are merely kept out of the frost, the night temperature may go down to within a few degrees of freezing. Heat in houses where plants are in hloom, should he at from 60° to 65° during the day.

MUSTARD SEED.—The Chinese are said to he making mouey in Monterey county by gathering and shipping to this city wild mustard seed. Last year one Chinamen employed ten of his countrymen in the business and pocketed a profit of $15,000.

TAXING LARGE RANCHES.—The experiment of taxing large ranches at their full valuo has been found to work well the past year in Los Angeles. The result has heen that thousands of acres have passed from the hands of speculators into the possession of producers, who hring active capital and permanent prosperty into the county.

THE English potato crop has turned out better than was expected. Experience is proving that it is mainly the late varieties which fail there; such being injured by the heavy autumnal rains, which come before they cau be taken from the ground. Farmere are urged to plant early varieties.

THE first cargoes of this year's California wheat are heginning to arrive at Liverpool. With the present market thore, the shippers must he largely losers. This is very unfortunate, and tho fact has a depressing influence on the market here.

TAR ON PEACH TREES.—A fruit- grower in Bartlett, Teun., followed the advice given in "Ten Acres Euough," and covered his peach trees for a few inches ahovo the ground with tar to keep off borers, etc. Result—an equal number of dead trees.

GRAIN IN SAN DIEGO.—The grain crop in San Diego couuty, the past season, has turned out very finely, iu spite of tho warnings of the old Californiane that the country was too dry for grain.

SWEET POTATOES IN OREGON.—The Willamette *Farmer* says that as fine and equally as large sweet potatoes have beeu raised in Oregon, the past season, as have heen received from California.

CRAB APPLES are assuming much more importance among northwestern orchardists than heretofore.

THEY are planting black locust trees in Los Angeles for future use.

The "Driver" Ants.

Dr. G. A. Perkins contrihutes to the *American Naturalist* a description of these ants, the pest of tropical Africa. We quote and condense:

"The night is chosen for their foraging expeditions. In the midst of social enjoyment the announcement is made, 'Here are the drivers!' and, instantly, all are on the alert to escape. Lanterns and hamhoo torches aro lighted, and a search made about the house to learn the direction taken by the assailants; and if in their usual numbers, the house is often left to them entirely for hours.

An invading army could not exhibit a higher state of discipline than is seen in the movements of these insects. They enter a house usually at one point, whero a stroug guard is stationed to defend the pass; they then branch off right and left, and again divide, and subdivide, till the whole ground is completely covered; not an inch is left unexplored, and every crack and cranny is entered, giving hut little hope of escape to any creature that may he found secreted there. Attacking their prey, they plunge their forceps into it, regardless of the size or strength of their antagonist. Nothing will cause them to relax their hold. The animal or insect writhes or twists under the pain; hut his case is rendered more hopeless every moment hy additions to the numher of his assailants; at length, when completely exhausted hy struggling, he yields to his fate, and is dispatched. They have been known to attack a human heing, when rendered helpless hy disease, and cause his death in a few hours.

If a live coal is dropped in their way they immediately attack it, though hundreds may perish in doing so. It is interesting to see a hand of these midnight marauders returning home from the scene of plunder on the approach of day. Issuing from the same place they entered, they are each seen hearing away some trophy with them; a joint of a cockroach's leg, the hody of a spider, or the larvæ of some insects, etc., are the various spoils. As the lahorers pass on with their loade they are guarded by a largo body of soldiers, which are stationed along the sides of their path; or, if they aro to pass through a place of uncommou exposure, these soldiers form a covered passage, hy standing upon each other's backs and hooking their forceps together. Through this arch thue formed the laborers pass in safety."

THE USE OF BOTH HANDS.—A writer suggests that it would be a good thing for men and women were they taught, in childhood, to use their left hands equally with their right. The use of the right hand only for certain actions—such as writing and working with mechanical tools—is entirely couventional, and there does not appear to be any reason why people should not be ambidexter in every kind of manual work. Persons who have lost their right hand by accident frequently acquire great facility with the left after eome practice, but grown up persons have not always the patience to hetake themselves to the necessary practice. By children the thing would be acquired ineensihly, if means were taken to lead them to the practice of it. Children living in houses where two languages are spoken acquire both with great facility, and what is true of tongues would he equally so of hands.

A STEAM OMNIBUS.—An omnibus, drawn by a road steamer, has heen huilt in Edinburgh for an enterprising omnibus proprietor in one of the largost English towns. At the first trial the eugine, with the omnihus attached to it, was run up and down the incline to exhibit its speed and the ease with which it could he controlled. It went up the hill at the rate of seven miles an hour and came dowu at the rate of nine. It turned iu the road with far greater ease than if drawu by horses, was pulled up instautaneously at the word of command, and even backed up hill. It then ran at hest omnibus speed up Leith street, in spite of its steepness. Tho dexterity with which it picked its way hetween strings of cart-horses, omnihusses and cabs, and the docility with which it stopped or turned wheuever it was required, were spokeu of as marvellous.

ANOTHER BATTERY.—M. Böttger is reported in Paris journals as recommending for force and durability the following for galvanic batteries: A cylinder of amalgamated zinc is placed in a concentrated solution of equal parts of common salt and sulphate of magnesia; the antimony is placed in a porous cell filled with dilute sulphuric acid.

Mining Summary.

THE following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

TARSHISH.—*Chronicle*, Nov. 20th: Considerable first-class ore has been taken from the upper tunnel. Good headway is being made in the lower.

PENNSYLVANIA.—This company is at work in the south drift, and rich rock has been taken out.

THE MOUNTAIN.—The furnace house has been rebuilt with regard to safety from fire, and work in the tunnel is progressing. Water is coming in, the rock is seamy, and several spurs of quartz have been cut.

LEVIATHAN.—*Miner*, 20th: The first pit of charcoal for this mine is nearly ready, and it is thought that the soil near Soda Springs will serve as a flux.

IMPERIAL.—The tunnel is now in 1,280 feet, and has been run with less cost and in less time than any other work of the kind in Alpine.

ORE SHIPMENT.—The teams which took the machinery to the Leviathan mine last week returned loaded with ore, which they will deliver at Reno, to be shipped thence to England.

AMADOR COUNTY.

CASCO.—*Ledger*, 27th: We learn that this mine is steadily improving. During the past week, excellent rock has been struck in the north level.

CALAVERAS COUNTY.

RAILROAD FLAT.—*Chronicle*, 27th: The Petticoat mine is to he supplied with new machinery for both milling and hoisting. The machinery has been purchased, and is already on its way. It is the intention of the proprietor to have it in operation before the rain sets in.

NEW DIGGINGS.—The Mokelumne Hill Canal Co. have just laid 3,500 feet of 11-inch pipe, under 20 feet pressure, to conduct water on to Poverty Bar Ridge, near Camanche. The ditches connecting with the pipe are completed, and the water is now on the ridge. A dozen miners' cabins have been erected in that vicinity within the past week or two, and their occupants are already washing. Teams are hauling lumber, and everything is hustle.

MARIPOSA COUNTY.

QUARTZ MILL BURNED.—*Gazette*, 26th: On Wednesday last the hoisting machinery and buildings of the Marble Springs mine, near Coulterville, were destroyed by fire. The mine had not been worked for a year and a half. It is supposed to have been set on fire.

NEVADA COUNTY.

MINING ON THE RIDGE.—Grass Valley *Union*, 23d: At Birchville not much is doing. Chinamen are working the opened claims, and are not making more than wages. There are many valuable unopened mining claims at and near Birchville. These will he worked to advantage when the tunnel now being run is completed. This is now in 3,000 feet, the end being 400 feet from the surface. A shaft is to be raised from the end of the tunnel. At Buckeye Hill, the Evans & Stidger claims yield from $16,000 to $18,000 for every 30 days' washing. At French Corral there are three cement mills (one a new one) of ten stamps each, running constantly, with profitable results. The cement claims at Empire Flat, one quarter of a mile from the Corral, are doing well. At Sebastopol, the American Co. is doing well, working with the hydraulic process. On San Juan Hill, two new companies have started up. The Eureka Lake Co. is, especially, taking out good pay. At Badger Hill, two companies are waiting for a tunnel to be completed. The English Co. is doing well. The McDonald Co. at Grizzly Hill has struck good gravel. The Chinamen bring in to Block & Furth, Bankers at San Juan, from $2,000 to $5,000 worth of gold dust per week.

RATTLESNAKE.—Same of 26th: There have been some discoveries of good quartz ledges at Rattlesnake, five miles south of Grass Valley. Numerous locations of claims have been made.

MINING SITUATION.—Same of 28th: Mining in Grass Valley was never more brisk or more profitable than it is to-day. We hear the best of news from the upper part of the county. Near Nevada City the Pittsburg is yielding splendid rock. At a point 30 feet south of the old works the rock taken out yieled $98 per ton in free gold, and the sulphurets at Maltman's works yielded $150 per ton. The yield of rocks and sulphurets together gives as the proceeds per ton about $135. Yesterday, Delano sent below a bar of gold worth $6,000, the product of Perrin's mine, Wolf creek, in two week's run. The shaft is being re-timbered, and the workmen are not taking out ore. This mine employs 22 men, and its yield, since opened, has amounted from $11,000 to $12,000 per month. Hoisting, pumping and crushing are done by water-power. The Wisconsin mine and mill has started up, the old employés leasing the works. The John Bright will have a whim in operation in a few days. Good rock is coming out. At Rattlesnake, Eudy & Co. are about putting up a mill. The O'Connor mine is taking out splendid rock. The Allison Ranch Co. has struck it rich. At the depth of 486 feet, on the incline, the main ledge is three feet thick, and is covered with free gold, besides being rich in sulphurets. In the lowest north drift the ledge shows well. The Carihoo ledge, supposed to he a feeder to the main ledge, is turning out the richest rock ever taken out in this district. The Carihoo is ten inches in thickness, and shows great flakes of gold. The office of the company, at the Ranch, is crowded with rich specimens of quartz from the Carihoo. The Harterey is paying for sinking, and a small dividend beside. The prospects are good. The Eureka and Idaho keep up their same old steady lick, giving no astounding items, but turn out big dividends.

LARGE LUMP.—*Transcript*, 23d: On Saturday in the Kennehec claims, near Birchville, a lump worth $200 was found in a crevice upon the bed-rock.

TO START AGAIN.—The Pennsylvania Co., which has not been worked for two years, is about to he started up again. When this lead was struck, for a long while it paid handsomely. It is the general belief that the Nebraska lead runs through these claims.

MEADOW LAKE.—Virginia City *Enterprise:* A gentleman just in from this place says rents are remarkably cheap in that town. About half a dozen families have their choice of two or three hundred houses. Mining and milling are at a standstill. The ores are very intractable, and even the most stout-hearted and enthusiastic are becoming discouraged.

FALL CREEK.—*Gazette*, 23d: A gentleman just down informs us that the Dillon and Industrial companies—consolidated for prospecting—have their tunnel in 1,000 feet. The tunnel is supposed to he within 50 feet of the gravel lead, the perpendicular depth being 200 feet. The Maguire, adjoining, have run a tunnel from the face of their hydraulic claims into the Doolittle Hill, and found pay gravel from the start. Their last clean-up yielded $3,000, after 45 days' run. Henry & Co., below, have suspended work for the winter, and propose putting up hoisting works next spring. Five companies below are doing work enough to hold their claims. About 25 miners will remain in the camp during the winter.

PLACER COUNTY.

IOWA HILL.—Cor. of Auburn *Herald*, 27th: Morning Star Co. started up their new 10-stamp mill six weeks ago. They have just cleaned up 600 ounces, the result of three weeks' run, working daytimes only. The new 20-stamp mill at Monona Flat will he ready to run the first of January. The Lebanon mill, near Wisconsin Hill, is ready to run as soon as they can get water. The ditches are not of sufficient capacity to afford water for any great length of time. There is some talk of bringing in a branch of the South Yuba ditch. If that is done, Iowa Hill will become a flourishing mining camp.

PLUMAS COUNTY.

PROSPECTS WELL.—Quincy *National*, 20th: O'Neill & Co., prospecting on the head of Newtown Flat, near the old Pioneer claims, struck pay dirt a few days ago. They have sunk three shafts, each 40 feet deep, and at the bottom of the last one struck gravel which "pans" at the rate of $3 per sack full. The character of the gold shows that they are on the old Elizabethtown lead.

SHASTA COUNTY.

SALE OF DITCHES.—*Courier*, 27th: E. R. Jones, of Eagle creek, has sold the two Cottonwood ditches to Mr. Pottor of San Francisco. The price paid is reported to he $2,000. We understand that it is the intention to enlarge these ditches next summer.

DITCH LEASED.—A. R. Andrews has leased his mining ditch at Roaring River to Wm. Logau. The ditch is in good running order.

SISKIYOU COUNTY.

QUARTZ.—Yreka *Union*, 20th: At Wheeler & Baker's may be seen specimens of quartz from the Eliza ledge at Humbug, owned by Lash & Co., plentifully sprinkled with free gold, and filled with the heaviest sulphurets of iron. The quartz resembles that found in the Eureka and North Star ledges, at Grass Valley. The ledge is over six feet wide in the new tunnel.

MCADAMS CREEK.—Lieut. H. Mathewson has struck a quartz ledge in the old Hardscrabble claim. It is three feet in thickness and rich in gold. He is taking out quartz, which he intends to get crushed as a test.... Chinamen are employed as drifters in nearly all the claims on McAdams creek. They give general satisfaction, and work for just half the wages demanded by white men.

TRINITY COUNTY.

PROSPECTING FOR QUARTZ.—*Journal*, 27th: Mr. Phelps has found rock in West Weaver Mountain, which, by imperfect working test, yielded at the rate of $50 per ton in silver. The formation of a company is seriously talked of, and an organization will be effected soon. There can he no doubt that there is a rich mineral belt ranging through the county. The character of our placer mines establishes this fact.

BROWN'S CREEK DITCH.—The new flumes are put in all the way to Mahie's Flat, and the ditch cleaned out. The rest of the ditch on the other side of the creek will he repaired immediately.

TRINITY CENTER.—Boynton & Whitmore finished cleaning up last week, taking out about $4,000....Thomas Cayle is putting down a large flume in his claim....George Williams and Lewis Hall have purchased the Sikes ditch and claim; have thoroughly repaired the ditch and flumes, and are ready for operations.

TUOLUMNE COUNTY.

PLACER MINING EXCITEMENT.—Sonora *Democrat*, 27th: The miners at Chinese Camp and vicinity have been for a week staking off ground. Two colored miners, on Tuesday, found rich pay one-half mile northeast of Chinese. Some Chinamen who had been working in a small gulch which runs into Wood's creek, quit work some time since. The darkies prospected on the banks where the Chinamen had not worked, and struck diggings that pay from one to two ounces a day to the hand. Some of those who have taken up claims have found good prospects, and commenced washing.

BUCHANAN.—Mr. Breuer brought to town Monday last over eight pounds of gold, the result of the last run on rock from the "Old Buchanan mine."

Arizona.

BIG BUG.—Prescott *Miner*, Nov. 13th: Theo. Boggs, on Thursday, informed us that the mill was running on Eugenie rock, which, from indications, was paying well. Lively times in Big Bug now.

THE PROSPECTORS.—Jackson's party returned Sunday from their prospecting trip, after an absence of nearly three months. They were unsuccessful in finding placer diggings, but found lodes of gold and silver quartz that assay handsomely. Many of the party talk of going back again.

Colorado.

WARD DISTRICT.—Boulder *News*, 16th: We are informed that the Ni-Wot Co. have struck a body of ore in their east drift that turns out over $300 per cord. They are running 20 stamps. There are 50 men employed in the district. One other mill is kept at work most of the time. Some of the miners are piling up their best iron for some better method of working. At Gold Hill, Wm. Brierly has suspended operations for the winter, for want of milling facilities, there being but one ten-stamp mill in the district. Christopher Houlk has completed his hoisting works on the Horsfall, and will work during the winter. He is down 100 feet, and has a crevice of one foot of $400 iron, per cord, of ten tons. Parties working the claims adjoining Houlk on the west, are taking out ore that will run $500, and over, to the cord.

MINING ITEMS.—Central City *Register*, 18th: Dr. Rae's machinery for the Knickerhocker mill, at Empire, passed through town to-day....Two Cornishmen rented the Dead Broke lode, a branch of the Gregory, a short time since, and their ore, crushed at Walker's mill, yielded ten ounces per cord....The Consolidated Gregory Co. shut down their mill on Monday, but will start up again next week....Plumb Bros. have the plates of their new mill in excellent order, and are running it on ore from the Leavenworth lode, Russell district, for Chas. Harker....Judge Dickerson is still putting an engine and boiler into his mill below Black Hawk....Ed. Moores is fitting up the old Wilson mill, in the 3d Ward. He is cutting a bed-rock ditch for water, and thinks he will have no trouble in running all winter.

Georgetown *Miner*, 18th: Work on all the tunnels is progressing favorably, with indications of rich "strikes" in two or three of them....Stewart will start up his works as soon after his return as he can obtain a supply of ore....The Baltimore Tunnel has been widened its entire length, and the drills are now working in the heading. Sinking on the Boaz has been resumed....L. Huepeden & Co. are running on a lot of Magnet ore. There is something over two tons being treated. Samples of the pulp assay over 200 ounces in silver....L. Huepeden & Co's new crushing machinery is doing better work than with the stamps. The running of the new cylinder is perfection. One-third less power is required to run it than the old one, and the charges are several hundred pounds larger. ....Dr. R. J. Collins will soon resume work on the Tropic lode, Sherman Mountain....The ore vein in the east stope of the Terrible has widened to 12 inches. The production of ore is greater than ever.... The Marquette is the west extension of the Correct lode. The crevice has been developed by three shafts, from 6 to 13 feet deep, 300 feet apart. A vein of mineral is making its appearance on the hanging wall.

CAPITAL MOUNTAIN.—Discovery shaft on Stephen Girard lode is 12 feet deep; pay-vein ten inches. On the Capital lode the pay-vein is four feet wide at 50 feet depth in discovery shaft. An average assay gave $198 per ton. Selected ore gave $13,000 per ton. Other assays by other persons gave about $1,200. On hand, four tons first-class ore, and a large quantity of second-class. Active work will soon be commenced.

OHIO MOUNTAIN.—Rip-Tearer lode has a 15-foot shaft. Fear-Not has a wide crevice. Commonwealth has a very large outcrop. Discovery shaft 60 feet. Crevice at bottom full seven feet wide. Two tons of first-class ore on hand, and a large amount of second-class. Ohio lode shaft is 70 feet deep and has a 7-foot crevice.

MOUNT OLIVE.—Mayflower shaft 10 feet down. Emmet is well opened in several places. The ore is worth $100 per ton. A tunnel site has been selected and work commenced.

HIGHLAND MOUNTAIN.—Discovery shaft of Highland lode 40 feet deep. Crevice four feet—pay-vein 10 inches. Native silver is found. Select ore assayed $1,300 per ton. Fourteen and a half tons have been treated, and profitably. Vigorous work will he continued all winter.

Montana.

BUTTE CITY.—"Clover Leaves" in *New Northwest*, 19th: Comparatively little of the mining ground in the vicinity has yet been worked, lying above all the ditches yet in. The yield, where water is obtained, is large. In the gulches covered by the two or three ditches, only a few claims could be worked in 1869. Forty-five claims (names given) paid, in 1869, $161,000. There are hundreds of claims above the level of the present ditches. These will quadruple the yield on the completion of the Humphrey ditch, now being built by the Humphrey brothers. This is one of the gigantic works of the day. Butte, on the Pacific Slope, needs water; Boulder basin, on the Atlantic Slope, has it. To carry it from the one to the other, a ditch 30 miles long, with a tunnel 24,000 feet long, through out the main divide of the rocky mountains, is necessary, is undertaken, and is almost completed. It will carry 2,000 inches of water high on the Silver Bow region, and give employment to 5,000 men.

LAST CHANCE.—Helena *Gazette*, 18th: On Taylor, Thompson & Co's claim below town, a deposit has lately been discovered, which will take a long time to mine out. This runs twenty feet deeper than has ever been heretofore penetrated on this claim, with equally good pay.

SHIPMENT OF QUARTZ.—C. W. Sears has just returned from shipping 90 tons of rock eastward, to be tried. This is from the rich lodes at the head of Ten Mile. From Corinne, the ore will be shipped by railroad.

GOLD CREEK.—The camp has suspended operations for the winter, with the exception of two claims on Pilgrim Bar.

PHILIPSBURG.—*Capital Times*, 17th: Benj. Levy gives us these items: The Eastern Camanche is 1,000 feet open, and from 30 to 78 feet deep, by inclines and shafts. It is owned by the Brown Bros., and Cogswell & Waterbury. They have 600 tons of ore out, some of which is so rich that native silver may be seen. The Mountain Queen is another rich lode. The ore is free from base metals, and Mr. L. thinks it will yield $100 to the ton. It is owned by John Ullery, Ben. Franklin, and Dr. J. M. Merrill. The Speckled Trout lode, owned by Cole Saunders, is now being developed. Eight hundred tons of ore have

been taken ont within 30 days. This is to be run threngh a concentrator, and afterwards shipped East in gunny sacks. The Acliff is the name of another lode, owned by Mr. Arthnr Horton. Mr. H. bas 40 tons of ore, part of which was crushed, showing an average of $85 to the ton. There is a shaft on this lode 50 feet in depth.

Nevada.

COPE DISTRICT.

MOUNTAIN CITY.—Elko *Independent*, Nov. 27th: The Atchison and Drew mill will start up to-day. Milliug facilities are greatly needed. New discoveries are daily made in the mountains for a circuit of 60 miles.

COPE ORE.—About three tons of rich ore from Cope were received en Thursday by Reinhart & Co. It was forwarded to San Francisco to be worked. The last shipment of ore from the Mountain City mine worked $342.17 per ton. This was taken from tbo surface, with n view of giving a fair sample. Some ef the ore was covered with moss. Ten tons of choice ore will be shipped, five tons to the English mill at Reno, nnd five to San Francisco.

HUMBOLDT.

ROCHESTER.—*Register*, 27th: Mr. Onderdonke, the Supt., hns returned from the East, prepnred to rcsume work in the shaft immediately. A pump to drain the sbaft will be put in as soon as soon as it can be procured frem San Francisco. An engine for hoisting and pumping purpeses is already on tbe ground, and werk will be carried on steadily during the winter.

TAILINGS.—Mr. Pease, Supt. of the Union Series mine, has purchased a large pile of tailings, the nccumulation of a year's custom work at the Holt mill ere it was removed to Golconda, nmeunting to several hundred tons, and will ship them to the Reno mill for amalgamation.

UNIONVILLE.—Correspondence of same: The old war betweon the Silver Mining Co. and John C. Fall nnd others, has broken out anew. The Co. hnve commenced an action aginst Full & Co., charging tbem with trespassing, nnd have asked for nn injunction.

ARIZONA MINE.—The *Enterprise* has seen some very rich specimens of ore from this mine, and from tbnt of the Silver Mining Co's claim. This company ship some 15 tons per day to Swansea, which works $550 per ton, nnd have reduced at home some 30 tons that pays $100 per ton.

BATTLE MOUNTAIN.—*Register:* The extensive mineral deposit recently discovered in the vicinity of Galena, ten miles from Battle Mountain, are erenting an excitement. Miners and business-men are rushing thither.

THE UNION SERIES.—Work progresses steadily on the Union Series in Winnemucca mountain, and recent developments are encouraging. Superintendent Pease shipped last week to the English Co's mill at Reno, 15 tons of ore for reduction.

REESE RIVER.

MINERAL HILL.—*Reveille*, Nov. 22d: The agent of a company at Virginia City nrrived bere on Saturday, for the purpose of examining quartz mills, and to select one and have it removed to Mineral Hill.... The *Independent* says: McWilliams, Mills nnd Frazier have made arrangements with Ward & Co., who own pretty much all of Mineral Hill, to erect n ten-stamp mill. These gentlemen have gone to San Francisco to purchnse the machinery, and intend to have it on the ground within two weeks.

MANHATTAN.—*Reveille:* Tbe mincs of this Co., on Lander Hill, never looked as well as at present. In the different works, the drifts and breasts expose extensive bodies of hnndsome ore, which seems to assure tbe supply of the works for a long period. Yesterday six bars of bullion were shipped overland per W. F. & Co.

SPRING VALLEY.—We have before us specimens from the Reeves and Berry, and two unknown claims, which are masses of stetefeldtite. Chloride ore is found in some of the claims, samples of wbich appear to abouud in horn silver. One specimen which has been shown us assayed $1,483 per ton in silver.

EUREKA DISTRICT.—The amount of smelting ore is abundant. Tbere will probably be a dozen furnaces in the district before the middle of next summer. Twenty tons of lead bullion have been produced by tbe smelting works during the last 30 days. A letter says: The Eureka furnace, under Col. Buel's mnuagement, will start in two or three days. Col. Robbins' and one or two more furnaces are nbout to he commenced. Col. Robbins has a mill on the road,. which will he here in 14 days. Some large sales of mines are reported. The Champion and the Buckeye were bought by Messrs. Buel and Bateman. On the whole, things look promising.

OPHIR CANON.—Major Clendon, the Supt., is pushing work in the Murphy mine of the Cambridge (late Twin River) Co. The water has been entirely pumped out, and men are at work drifting and sinking.

SANTE FE DISTRICT.—Several lots of ore hnve already heen hauled to the mill in this city, the net yield of which was considerably more than the expense of mining nnd milling.

SILVER PARK.—Cer. of *Inland Empire*, 26th: "There are about 100 claims located on these hills, all of which show fine chloride ore of a greenish blue color. The ore assays from $100 to $800 per ton. Immense quntitics of float, or boulders ef ore, are found on the flanks or sides of the hills, nnd several parties have collected from 10 to 30 tons.

WASHOE.

SIERRA NEVADA.—Gold Hill *News*, 27th: The raise from the car-track level has connected with the southwest surface deposit, and the north drift from the same level to connect with the north surface body has struck petty good quartz. The mill is shut down for two or three weeks to put in new machinery.... YELLOW JACKET.—The only developmcnt made lntely, is the assessment of $5 per share. The present yield is 200 tons ef ore per day, including large amounts of low grade ore taken from the 700-foot level of the old mine, nnd shipped by rnilroad to the company's mill on Carson River.... OCCIDENTAL.—Face of lower tunnel in quartz shewing metal, and constantly improving. The body of ore recently developed at the north end of the old mine is improving in heth quality nnd quantity.... SAVAGE.—Sinking in the main shaft progressiog. The late ore develop ments senth of the shaft are looking well, yet are not quite as extensive as at first anticipated.....HALE & NERCROSS.—Tbc body of ore developed at the 1,100-foet level is known to he 300 feet in length, with an average width of 30 feet. It extends to the level ahove, and the sinking of the main shaft 100 feet deeper will he sbortly commenced. A telegram of the 23d says: The northern cross-cut has reached the west wall. Tbe ore at this point is 49 feet wide; the western is ten feet, and contains the richest ore ever found in the mine.... OPHIR.—Still waterlogged, the water in the new shaft being nemly 400 feet deep. The pump is working finely, discharging at the rnte of 16,000 gallons per hour.... CALEDONIA.—Indications at the 100-foot level are promising.... BULLION.—Prospecting as usual, principally at the 1,400-foot level.... SEGREGATED BELCHER.—The small body of rich ore is as yet not fully developed. The mine generally is looking well.... CROWN POINT.—The cross-cuts east and west from the south drift at the 1,000-foot level show no metal.... KENTUCK.—The principal ore supply is from above the 800-foot level, and the usual daily yield is kept up. Considerahle ore is produced from the upper levels.... CHOLLAR-POTOSI.—The present yield is 125 tons per day, assaying $40 per ton.... GOULD & CURRY.—Present yield a little ovcr 50 tons per day from the old workings, cnr samples nssaying $39 per ton.... VIRGINIA CONSOLIDATED.—New shaft 440 feet deep. The rock heing favorahle, with little water to interfere, good progress is made.... OVERMAN.—Yielding 130 tons of ore per day, which assays $49 per ton.

WHITE PINE.

The usnal mining review for the week has failed to reach us, either through the *Empire* or the *News*.

DOWN THE CANON.—*Empire*, Nov. 23d: As Gold Cañon is to the Comstock as a milling center, so is the cañon stretching away to the eastward of this city to White Pine. Snbstantial improvements are to be seen all along the route, and general thrift seems to pervade all branches of industry. At the Cbicago mill several largo teams are discharging machinery, and a large force of mechanics putting it in place. The Swansea mill, with a fair supply of ore on the dump, is kept in constant operation, works to perfection, and is yielding splendid rcsults. A little further along, Colonel Townsend has men widening his grade. Nevada mill has been out of service the past week, pending the change from dry to wet crusbing. The machincry will be set in motion again to-day for the winter's run. There are 12,000 tons of ore from the Aurora Consolidated mine on the dump. The Little Treasure and Henderson's mill are botb in litigation, and in consequence are idle. The machinery for a foundry is to he seen a short distance above the Swansea mill.

HIDDEN TREASURE BULLION.—There were shipped from Lerhenan & Co's nssay office, Shermantown, yesterday, three hars ef bullion, 984 fine, aggregating $4,011.52, which is the first shipment of bullien from ore ef the Original Hidden Treasure mine worked at the Metropolitan mill.

HAPPY JACK WINS.—The suit between the Happy Jack and John Dare Companies was yesterday determined in favor of the fermer. One of the peints at issue was the number of days work necessary to hold a location for one year. Judge Beatty adhered to his former construction of the miuing laws, te wit: that two days laher for each claim of 200 feet is requisite.

AN ITEM.—A few mouths since, a man with ne capital save a peny, some hlnnkets and a little foed, left Hamilteu on n prespecting trip. Seuth ef here some 100 miles he found some ledges. By dint of hard work he dng two tens ef ore. He took it en pack nules a long distauce to a quartz mill in Hiko nnd had it worked. After paying nll expenses, the bullien from the two tens nctted him nearly $600 per ten, with which he beught him some mining teels, seme flour, hacon nnd whiskey, and going back, fixed him a cabin, and has now set down to his winter's task of developing bis miue.

OFF FOR KERN.—Same of 27th: Yesterday morniug, Taylor, Southwick and Barnaby left this city with a wagon loaded with provisions and chemicals for Kern District. They inteud to spend the winter in developing some of the mines in which they are interested. They will make experiments in the reductieu of ore by an arastra. Several parties are talking of taking mills inte Kern this winter.

BASE METAL RANGE.—A Shermantewn letter te the Elko *Independent* says: The Base Metal Range is now attracting more attention than auy other locality. The mountain is almost one selid mass ef mineral, of high aud low grade. Smelting furnaces are to be secu in full blast at every turn of the roads nnd bend in the cañons, while the late increase in the shipments of rich lead bullion attest the fact that the ore can be successfully reduced by smelting.

New Mexico.

UTE CREEK.—Elizabcthtown *Telegraph*, Nov. 20th: Over the range, a large amount of money is heing expended in perfecting tbe arrangements for mining. The two quartz mills are as complete ns possible. On this sido of "Baldy," the prospects are brightening. Graham & Co's quartz mill will soon he iu, nnd will be put up speedily nfter its nrrival.

PLACERS NEAR SANTA FE.—"Mr. Brown has sold his mill to the Candebrian Q. M. Co., and we are ruuuing on quartz from the Co's mine with good results. There is a three-foot crevice of quartz, with a shaft 60 feet deep, with levels running 20 feet each way on the lode. Brown is opening a promising lode. The shaft is 60 feet deep, with a 2½ foot veiu. We ran eight tons of quartz, which yielded well. He is putting up another stamp-mill. At the Old Placer, the Co's mill is running on quartz from various lodes. I understaud the rcsults are not flattering."

PLEASANT HILL.—"The only company now working is Collins & Co., of Orleans Flat. They rock out about $10 per day to the man. Last Chance has shut up shop, so has Shouneasy. The boys on Willow Creek look smiling."

Oregon.

RAIN.—Jacksonville *Sentinel*, Nov. 20: For several days past the much-hoped-for rain has been coming down. We hear the Chinamen are buzzing around lively in their mining operations, and white miners in a few days more will bnve plenty of water.

PLACER GOLD.—Dalles *Mountaineer*, 16th: We were shown to-day a very good prospect of placer gold taken from Mt. Creek, about ten miles from the Dalles.

AMALGAM FOR ELECTRICAL MACHINES.—Dr. Böttger recommends the following preparation: Two parts hy weight of pure zinc are brought to fusion in an iron spoon, and one part of mercury carefully stirred in. Tbe product is an exceedingly brittle, easily pulverized, silver white amalgam, which in compact condition can be presented any time in closed bottles. It is best to rub up a small piece in a mortar, when wanted, and mix with a little tallow.

PHOTOGRAPHING COLORS.—An announcement has been made to the French Academy of Sciences by M. Cross that he has succeeded in photographing colors. Specimens were shown at the same time. If the report is reliable, the fact is an important one.

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the MINING AND SCIENTIFIC PRESS and other Journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND RATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Allegbany Cons., Sierra co., Sept. 21, 20c.	Oct. 25	Dec. 6*
Bromide Tunnel, White Pine, Nov. 5, 20c.	Dec. 9	Dec 28.
Bullion, Storey co., Nov. 22, $7.	Payable immediately	
Belcher, Storey co., Oct. 21, $7.50.	Nov. 23	Dec. 11.
Crown Point Storey co., Nov 5, $7.50.	Dec. 9	Dec. 28.
Coney, Amador co., Oct. 14 $5.	Nov. 20	Dec. 13
California S. M., White Pine, Oct. 19, $1.50.	Nov. 22	Dec. 13
Chicago and Detroit Cons, July 16. 50c.	Dec 4	Dec. 27*
California, White Pine, Oct. 19, $1.50.	Nov. 23	Dec. 13.
Cherokee Flat, B. G., Butte co. Nov. 6, $5.	Dec. 10	Dec. 28
Cons. Virginia, Storey co., Nov. 3, $1.50.	Dec. 8	Dec. 31
Daney, Lyon co., Nev., Oct. 13, $1.	Nov 15	Dec. 4.
Evening Star Cons. W. P., Oct 19, $1.	Dec. 1	Dec. 20.
Empire M. & M., Storey co., Sept. 29, $25.	Nov. 5	Dec. 9
Flowery, Storey co., Nov. 12, $1.	Dec. 16	Jan. 7
Imperial Storey co., Nov 15, $10.	Dec 20	Jan 14
Julia, Virginia Dist., Oct. 15, 50c.	Nov. 18	Dec. 6.
La Blanca, Mexico, Nov. 5, $1.	Oct. 4	Oct. 21*
Morning Star, Alpine co., $1.50.	Nov. 15	Dec. 6
Manchester, Alpine co., July 16, 0c.	Dec. 4	Dec. 27*
Mammoth, White Pine, Oct. 28, 20c.	Dec. 7	Dec. 28.
Mineral City, W. P., Nov. 3, $1.50.	Dec. 6	Dec. 17
Mahogany, G. H., W. T., Nov. 8, 10c.	Dec. 14	Jan. 4
Noonday, White Pine, Oct. 11, 30c.	Nov. 18	Dec. 9
North Bloomfield, Nev. co., Nov. 6, $5.	Dec. 10	Dec. 28
Noonday, W. P., Nov. 13, 50.	Dec. 20	Jan. 15
Pohue, Storey co., Oct. 29, $2.	Oct. 2	Dec. 24
Pilot, W. P., Nov. 23, 10c.	Jan. 3	Jan. 18*
Pocahontas, El Dorado co., Nov 12, $7.	Dec. 20	Jan 12.*
Rising Star, Idaho, Nov. 5, 50c.	Dec. 18	Jan. 15.
Rathburn, White Pine, Oct 26, 50c.	Dec 1	Dec. 22.
Rocker M. & M., Storey co., Nov. 23, $100.	Dec. 27	Jan. 13
Silver Star, White Pine, Nov. 2, 15c.	Dec 17	Jan 3.*
Segregated Belcher, Storey co., Oct. 22, $1.	Nov. 23	Dec 11.
Silver Vault, W. P., Nov. 23, 50c.	Dec 24	Jan. 24
Sacramento and Meredith, Nov. 15, $1.	Dec. 22	Jan 10
Tallulah, E. W., Nov. 22, 25.	Dec. 31	Jan. 25
Taylor, El Dorado co., Nov. 16, 30c.	Dec. 20	Jan 10.*
Tecumseh, Calaveras co., $5.	Nov. 17	Dec. 8
White Pine Mutual Sept. 29, 50c.	Nov. 3	Dec. 7
Yellow Jacket, Storey co., Nov. 26, $5.	Dec. 28	Jan. 31

MEETINGS TO BE HELD.

Cole	Annual Meeting Dec. 8
Empire M. & M.	Annual Meeting Dec. 16
Ophir	Annual Dec. 15
Original Hidden Treasure	Meeting. Dec. 11
Taylor M. & M. Co.	Annual Meeting. Dec. 13*

LATEST DIVIDENDS—(Within Three Months).

Amador Co., div. $6 per share	Payable Nov. 8, 1869
Chollar Potosi, div., $1	Payable Nov. 10, 1869
Eureka, div. $7 50	Payable Nov. 8, 1869
Golden Rule, Tuolumne co, div. 50c per sh.	Pay. Oct. 26, 1869
American	Payable Nov. 10, 1849
Kentuck, div., $10 per share	Payable Nov. 19, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct. 10, 1869

*Advertised in this Journal.

Latest Mining Stock Prices Bid and Asked.

AT THE S. F. STOCK AND EXCHANGE BOARD

FRIDAY, December 3, 1869.

WASHOE DISTRICT, NEV.	Bid.	Asked.
Alpha	19¼	19½
Belcher	16	16¼
Bullion, G. H.	—	—
Crown Point	13	13¼
Cole (Va.)	—	—
Confidence	—	20
Chollar-Potosi	22½	23
Caney	1	1¼
Exchequer	8	9
Empire M. & M. Co.	—	59
Gould & Curry	78	—
Gold Hill Quartz	25	27
Hale & Norcross	174	175
Imperial	45	—
Julia	¼	¾
Justice and Independent	S	—
Kentuck	129	160
Lady Bryan	8	—
American	—	—
Occidental	15	—
Ophir	16¼	16½
Overman	86	87
Segregated Belcher	8½	9
Savage	59	60
Sierra Nevada	10	12
Yellow Jacket	45½	46
MISCELLANEOUS DISTRICTS.		
Amador (California)	290	—
Aurora, White Pine	15	18
Eureka, (California)	240	250
Golden Chariot (Idaho)	15	—
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocolillo, White Pine	—	—

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Dec. 3, 1869.

W. T. Atwood states the following as approximate price at which copper ores can now he sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		Per ton
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	35 20	30 " "	75 00
17 " "	38 25		

Ores nssaying ahove 30 per cent., $2.50 per unit. Bars at the rnte of 13c. per lb. for pure copper.

EASTERN LAND OPERATIONS.—Several prominent gentlemen have recently purcbased 75,000 acres of school swamp lands in Wisconsin at a very low price. They are also purchasing large quantities of other unoccupied lands. All of this land will he sold to emigrants, who will settle upon and improve it, *at cost*—the purchasers considering themselves amply repaid for their trouhle in the general prosperity which will tbereby accrue to the State. Will our Californin laud monopolists make a note of the above?

THE LAST FROM DR. LIVINGSTONE.—Dr. Livingstone was at Zanzibar in good health August 8, 1868. He had been spending the year previous exploring the country south of Tanganyika lake, which he found to contain many small springs, which he claims to be the true sources of the Nile. He requests furtber supplies of necessaries, including nautical instruments and copies of almanacs for 1869 and 1870. Tbis indicates that he proposes remaining in the country a long time.

Reading for the Hour.

Accidents.

We pride ourselves on being a peculiarly "go-ahead sort" of people in this State, and that when we once have commenced a work we put it through in a rapid manner. Not having had railroads for any great length of time, our advantages in the line of railroad disasters have hitherto been limited; but apparently we are now making up for lost time; and if our proper amount of people are not killed off, it will be no fault of ours. Gunpowder and nitro-glycerine explosions are also getting to be the order of the day; and the reporters of the daily papers have full scope now for the exercise of their descriptive powers. We expect soon to have the half of San Francisco burned down. It would be a good idea to import a large amount of arsenic, so as to have it handy; and there are a thousand other little tricks which will readily occur to the mind of the thinking man.

There is a little motto which we all have heard, which we consider to contain a good moral, and which we all remember to forget. This little motto used to be (it may have changed since we came to this State): "the want of care does more damage than the want of knowledge." Inventors may increase and multiply their patent safety-signals, powder, matches, valves, and other apparatus; but as long as we persist in being careless, we may laugh their efforts to scorn.

The Pope and the Roman World's Council.—Œcumenical councils seem to have "fallen through" for three centuries preceding the present month (December). Probably the desired results have been found more easily accomplished in some other manner. The questions and dogmas before the religious world recently brought to a definite form by Pius the Ninth's syllabus of modern errors, and the character of the Pope and the position of the ancient Catholic Church in the light of modern civilization, were very ably discussed by Prof. Theobald at his recent lecture at the Mercantile Library. He showed by a most graphic picture of the individuality, private character, antecedents, and of the election of Pius IX. to his position, how and why his grounds are taken thus and so; and how inevitable it is that the Œcumenical Council will prove conservative on what we understand to be dogmatical catholicism. The liberality of American and ultramontane bishops will not inaugurate any material change to "march with the age."

The "Great Delinquent."—Who is the great unknown whose name appears so frequently and oft-repeated (with the word "trustee") in the delinquent lists of the various stock companies, advertised in the city papers? Almost every mining company seems to delight in the sight of this name. Such frequent mention would have raised Barnum to the seventh heaven of happiness, and the thought that it costs the fortunate owner nothing, must cause the King of Paiu to groan with envy. Is he rich or is he poor—"to be, or not to be?" In the name of "Common Sense," is mining profitable? Will not the "Hills" in the "mineral county of San Francisco" continue to "pay?" Pick.

Chicago on the Brain.—The papers are greatly exercised on the subject of Chicago just at present, and much complaint is made by merchants, that Chicagoans are usurping their business and taking it out of the State. We suggest that business men here take example from the action of Wells, Fargo & Co. with regard to the Pacific Union Express;—buy up Chicago, and then raise prices.

Artificial Geysers.

The Geysers of Iceland are familiar to all as being among the wondere of the world. Much has been written about them, and varied have been the speculations in regard to their cause; the wildest theories having at times prevailed. The attention of scientific men was called to the subject, and after various ideas had gained ground and been refuted, Prof. Bunsen, of Heidelberg, arrived at satisfactory conclusions, which were tested experimentally by Prof. Muller, of Freiberg, and found to be satisfactory. Although these experiments were made several years ago, and are well known to scientific men, yet they may be new to some of our readers, and all the more interesting as we too have Geysers on a smaller scale in California, which are reckoned among the wonders of the State.

Immediately after an explosion of the great Geyser of Iceland a large basin, some 50 feet in diameter, is left bare. In the middle of this basin is a cylindrical hole or pipe, which sinks deep into the ground. In this pipe one can see the water calm and still as in any spring. Soon the water rising in the hole fills the basin with almost boiling fluid. After a certain time is heard an underground noise, as of thunder, the surface of the water commences to boil and hies; then quiet ensues for awhile, when the phenomena occur again with greater force. This is repeated with greater or less power, generally for the whole day, at pretty regular intervals. Then comes a change; the thunder becomes louder, the water boils in powerful commotion; thick vapors arise, and suddenly a stream of water is thrown some 80 to 100 feet into the air; as suddenly all becomes quiet again, and as the vapor passes off we see the empty basin again.

Prof. Muller imitates this by means of a very simple apparatus—a tube whose upper end terminates with a large basin. The tube and basin are filled with water, and then the lower part of the tube is strongly heated, when similar phenomena occur as in the case of the natural Geysers.

The explanation is equally simple. The water, which continually rises in the tube, has below, under the pressure of the column of water above, a far higher temperature than exists in the upper part. If now this very hot mass of water rise suddenly, and under a less pressure than that which corresponds to its temperature, it is instantly changed into steam, and violently throws into the air all water in the tube and basin above it, whereby the following masses of water, likewise freed from a part of the pressure, are as suddenly changed to steam. This continues until the water which is thrown up and falls back into the basin is so far cooled that it prevents further formation of steam. Then all is quiet until this cooled water is again sufficiently heated by the rising stream to allow of further steam formation.

This very simple and interesting experiment has, we see, been lately exhibited at a lecture in England; and, as it requires no costly apparatus, can be tried by any one who has an experimental turn of mind.

Report says, and there is reason to believe correctly, that the Eureka mine, Grass Valley, has been sold for $1,200,000.

How "Marbles" are Made.

The chief place of the manufacture of "marbles," those little round pieces of stone, which contribute so largely to the enjoyment of "Young America," is at Oberstein, on the Nahe, in Germany, where there are large agate mills and quarries, the refuse of which is carefully turned to good paying account, by being made into the small balls employed by experts to knuckle with, and are mostly sent to the American market. The substance used in Saxony is a hard, calcareous stone, which is first broken into blocks, nearly square, by blows with a hammer. These are thrown by the one hundred or two hundred into a small sort of mill, which is formed of a flat, stationary slab of stone, with a number of concentric furrows upon its face. A block of oak, or other hard wood, of the same diametric size, is placed over the small stones and partly resting upon them. This block or log is kept revolving while water flows upon the stone slab. In about fifteen minutes the stones are turned to spheres, and then, being fit for sale, are henceforth called "marbles." One establishment, containing only three of these rude mills, will turn out full sixty thousand "marbles" in each week. Agates are made into "marbles" at Oberstein by first chipping the pieces nearly round with a hammer handled by a skilled workman, and then wearing down the edge upon the surfaces of a large grindstone.

Benefit of Laughter.—Probably there is not the remotest corner or little inlet of the minute blood-vessels (life-vessels) of the body, that does not feel some wavelet from that great convulsion (hearty laughter) shaking the central man. The blood moves more lively—probably its chemical, electric, or vital condition is distinctly modified—it conveys a different impression to all the organs of the body as it visits them on that particular mystic journey when the man is laughing, from what it does at other times. And so, we doubt not, a good laugh may lengthen a man's life, conveying a distinct stimulus to the vital forces. And the time may come when physicians, attending more closely than at present unfortunately they are apt to do, to the innumerable subtle influences which the soul exerts upon its tenement of clay, shall prescribe to a torpid patient "so many peals of laughter, to be undergone at such and such a time," just as they now do that far more objectionable prescription, a pill or an electric or galvanic shock; and shall study the best and most effective method of producing the required effect in each patient.

The trial of Kane, the switchman, who has been popularly supposed to be the cause of the disaster on the Western Pacific Railroad, has been concluded and the accused discharged. The final argument of the counsel for the defense, as reported in the papers, was peculiar, powerful and pathetic. It was "small potatoes on the part of the Coroner's jury to pitch into a poor Irishman who could not be expected to know anything. The Lord had denoted who was the guilty party by killing off the engineer (also a few passengers who had no business to be on that particular train), and the sympathies of the people ought to be with the accused, because it was an expensive job to try a man." Evidently the learned counsel for the defense does not consider that an Irish Kane is a responsible keeper of his brethren.

The discovery of fossils is getting to be the rage. We hear continually of such discoveries in all parts of the State. If some of the geniuses who are so fond of this branch of science, would visit San Francisco, they would find a large field for exploration. The difficulty here, however, is not to find, but to get rid of these fossilized remains.

The dispute between the Union and the Central Pacific Railroads has at last been settled. The junction is to be at Ogden. At this place the branch routes to the South and to the North are to connect probably, thus giving neither of the Pacific roads an advantage over the other.

Legislation Without Politics.

We are a progressive people and look confidently about us for improvement in all new things—and prominent just now, the incoming Legislature shares our attention.

The present condition of the mining counties in this State, their residents burdened with taxes, which in some instances exceed the actual rental of money in other States, is a lesson to legislators and the people of every county which should not be passed without consideration. These burdensome debts, which expel capital and enterprise, and retard the progress of the State, were all incurred in strict conformity with law, or it is very certain their payment would be evaded.

Legislators of the Past.

A study of the class of men by whom the laws were passed, which authorized the creation of those debts, which have brought counties to the verge of bankruptcy or repudiation, will be exceedingly instructive. It will show that the people of many counties are only reaping the results of their folly in selecting men to act as legislators who were unqualified by age or experience to manage any business. They could not expect better results.

The ability to frame laws to protect the diversified interests of so large a State as California, is not to be found among that class who manage to make themselves useful to the leaders of political parties; yet it was largely from this class that legislatore were formerly selected in every county in the State. The results, if not felt as severely in the commercial or agricultural, as in the mining districts, are the same, and must finally culminate in disaster.

The history of every great swindle imposed upon the people by legislative enactment, as well as of those that have been prevented by the exposures of the press, are precisely alike. The prime movers in the scheme for robbing the people "according to law," have their associate agents in all the counties interested. These agents select ambitious, unscrupulous young men, having but little, if any pecuniary interest in the State, who are nominated for the Legislature at party conventions, and too often elected. Such men, when in the Legislature, are the docile, obedient creatures of the clique that nominated them, never heeding the interests of the people whose votes elected them.

There is not a county in the State but has cause to regret having sent worthless men to the Legislature to make laws. There is not a community that has not a record of some of these fellows, who have "sold out" the people that honored them. Scores, if not hundreds, of "members" of the Legislature of this State—hailing from the various counties from Siskiyou to San Diego—can be counted, who never returned to their constituents.

In not few instances, honest, well-meaning young men have been sent to the Legislature, to help them along in the world. Their election has generally been their ruin; the corrupting influences with which they come in contact, unfitting them for honest labor or business thereafter. Professional politicians are the worst kind of law-makers.

Legislators for the Future.

It is earnestly hoped by every true friend of the State, that the Legislature opening in Sacramento on Monday next, may prove an exception to the general rule. It comes into power with a great majority on one side, and it is expected that it will exert its influence to further the material interests of the people. Let it guard its political principles, but not at the expense of the people's rights. The financial, commercial and productive resources of the State are not as elastic and buoyant as in days of yore, and it is imperative that there should be a greater economy in the expenditure of the public funds.

Legislators may make an honorable record by holding a short session, passing as few laws as possible, and those only to aid in developing the latent resources of the State. Swindling the people by special legislation is a curse that will entail defeat and infamy on any political party. Give us laws independent of politics.

Entering a new capitol it is a fitting time for our law-makers to turn over a new leaf, and give us wholesome, instead of ruinous legislation. Let every legislator act for the right, independently of others, and the people will bear him out. Times are changing fast in our State, and miners, farmers, and all industrious and intelligent voters will hereafter hold their chosen servants to a more strict account.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

A. T. DEWEY. W. B. EWER.

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Inserted at special rates, saving companies more than half the cost of daily publication. Blanks for notices, in legal form, furnished free, with all information desired of the law for collecting assessments.

San Francisco:

Saturday Morning, Dec. 4, 1869.

Notices to Correspondents.

MINER, Spanish Ranch.—There is a calcium light, but the necessary apparatus for this is expensive. You will find some remarks on the subject of "Light for Hydraulic Mining," in the PRESS, March 27, 1869, a copy of which has been sent to the address of "Miner," Spanish Ranch. We would take this occasion to say that we do not usually take any notice whatever, of anonymous communications. "Miner" should have sent his personal address.

"O. M.," Nevada.—An illustrated description of the Stetefeldt furnace will be given next week, in which the difference between that and the Gerstenhoffer furnace, as employed in Freiberg, Mansfield, etc., will be pointed out. We do not know of any English work of the character you desire, extant.

"THE Mines the True Source of Wealth of California," has been received, and is awaiting an examination.

THE STETEFELDT Furnace in Reno will appear next week.

"HYDRAULIC MINER" will be answered next week.

The Fatal Explosion at Smartsville.

Lyman Ackley, a prominent mine owner, writes from Smartsville, Nov. 25th, relating to the late sad accident with Hafenegger powder in that place, stating that the wounded man, Leszinsky, will not lose his eyesight, and that he is improving fast. He also adds:

"I have talked over the whole matter of the explosion with him and the men in the tunnel—that is, the contractors—and they conclude that one of the candles must have fallen and ignited the powder in the can from which they were loading. The hole that Schmidt was tamping with the iron bar was not discharged. The accident occurred from gross carelessness, and would no doubt have occurred with any powder."

Mr. James O'Brien, owner of the tunnel in which the explosion took place, says that on examination he found one hole loaded in the right hand corner of the tunnel on the roof, with No. 2 powder, which he touched off, resulting in good execution. The middle hole, 3¼ feet horizontal, was partly loaded by pouring in loosely No. 1 (strong powder used with fluid), contrary to rules. This was also exploded separately, and did good work. Mr. O'Brien corroborates the conclusion expressed by Mr. Ackley above, and urges Prof. Hafenegger to return and proceed with the use of his powder, offering him facilities for hank and hydraulic blasting, for which purpose he considers the powder particularly desirable.

NEW HYDROMETER.—M. Baudin has constructed a new hydrometer in which the strength of the spirit is measured by its expansibility. A thousand measures of absolute alchohol at 50° becomes a thousand and seventy nine at 170°, or a little below its boiling point. With mixtures of alcohol and water the rate of expansion is not uniform; but M. Baudin's tables have probably been constructed upon special experiments.

Alphabetical List of Members of the California Legislature.

SESSION COMMENCING DEC. 6, 1869.

SENATE.

Banvard, E. M. (D.)—Placer.
*Beach, Horace (R.)—Yuba.
Betge, R. J. (D.)—San Francisco.
Burnett, William (D.)—Sonoma.
*Chappell, J. N. (R.)—Shasta and Trinity.
Comte, A., Jr. (D.)—Sacramento.
*Conn, Wm. A. (D.)—San Diego and San Bernardino.
*Conly, John (R.)—Butte, Plumas and Lassen.
*Curtis, N. Greene (D.)—Sacramento.
Farley, J. T. (D.)—Alpine and Amador.
Fowler, Thomas (D.)—Fresno, Kern and Tulare.
*Green, James J. (R.)—Contra Costa and Marin.
Gwin, W. M., Jr. (D.)—Calaveras.
*Hagar, John S. (D.)—San Francisco.
*Hunter, George W. (D.)—El Dorado.
Hutchings, S. C. (D.)—Sutter and Yuba.
Irwin, William (D.)—Siskiyou.
*Kincaid, H. (D.)—San Francisco and San Mateo.
Larkin, Henry (D.)—El Dorado.
*Lawrence, James H. (D.)—Mariposa, Merced and Stanislaus.
*Lewis, E. J. (D.)—Tehama and Colusa.
Maclay, Charles (D.)—Santa Clara.
*Mandeville, J. W. (D.)—Tuolumne, Mono and Inyo.
*McDougall, F. A. (D.)—Monterey and Santa Cruz.
Minis, William (D.)—Solano and Yolo.
*Morrill, D. L. (R.)—Calaveras.
*Murch, L. H. (R.)—Del Norte, Humboldt and Klamath.
O'Connor, M. P. (D.)—Nevada.
Pacheco, Romuald (R.)—San Luis Obispo, Santa Barbara.
Perley, J. E. (R.)—San Joaquin.
Perkins, G. C. (Ind. R.)—Butte.
*Pendegast, W. W. (D.)—Napa, Lake and Mendocino.
*Roberts, E. W. (R.)—Nevada.
*Saunders, J. H. (D.)—San Francisco.
Tompkins, Edward (Ind. R.)—Alameda.
Turner, H. K. (R.)—Sierra.
*Tweed, Charles A. (R.)—Placer.
Wand, Thomas N. (D.)—San Francisco.
Wilson, D. B. (Ind.)—Los Angeles.
Wing, J. D. (R.)—Tuolumne, Mono and Inyo.

ASSEMBLY.

Andrews, A. R. (D.)—Shasta.
Appling, E. (D.)—Fresno.
Berry, O. P. (D.)—Sutter.
Biggs, Marion (D.)—Butte.
Blakenship, J. A. (D.)—Monterey.
Brown, A. C. (D.)—Alpine and Amador.
Brown, J. E. (D.)—Yuba.
Calderwood, M. H. (R.)—Placer.
Carothers, J. H. (R.)—Contra Costa.
Coronel, W. F. (D.)—Los Angeles.
Crigler, J. C. (D.)—Lake and Napa.
De Haven, J. J. (R.)—Humboldt.
Doss, E. W. (D.)—Tulare and Kern.
Duffy, J. A. (R.)—Sacramento.
Ehrelroy, W. E. (D.)—Tuolumne, Mono and Inyo.
Escandon, A. G. (D.)—San Luis Obispo, Santa Barbara.
Finney, S. J. (R.)—San Mateo.
Fortune, H. W. (D.)—San Francisco.
Freeman, J. F. (D.)—Sacramento.
Fryer, R. C. (D.)—Los Angeles.
Gildea, Chas. (D.)—El Dorado.
Green, E. L. (D.)—Calaveras.
Griswold, John C. (D.)—San Francisco.
Haile, R. C. (D.)—Solano.
Hawley, B. F. (D.)—Nevada.
Hayes, Geo. R. B. (D.)—San Francisco.
Hayes, Michael (D.)—San Francisco.
Henley, Barclay (D.)—Sonoma.
Henley, G. W. (D.)—Mendocino.
Hihn, F. A. (Ind. D.)—Santa Cruz.
Horan, M. S. (D.)—Sacramento.
Hubner, C. G. (D.)—San Joaquin.
Hudson, Thomas (D.)—Sonoma.
Inman, Daniel (Ind. D.)—Alameda.
Johnson, J. M. (D.)—Alpine and Amador.
Kelly, J. M. (D.)—Yolo.
King, W. A. (D.)—Nevada.
Koutz, John, (R.)—Sierra.
Lambert, John (D.)—Lassen and Plumas.
Lewelyn, E. D. (Ind. R.)—Alameda.
Martin, J. N. (D.)—Butte.
Martin, R. M. (D.)—Siskiyou.
McCluskey, C (D.)—Yuba.
McMillan, Chas. (D.)—San Francisco.
McMurray, J. D. (D.)—El Dorado.
McMurray, John (D.)—Trinity.
Merritt, Geo. (D.)—Yuba.
Miller, J. H. (D.)—El Dorado.
Miller, W. (D.)—Marin.
Mooney, J. S. (D.)—Tuolumne, Mono and Inyo,
Moynihan, T. J. (D.)—San Francisco.
Munday, B. B. (D.)—Sonoma.
Murphy, B. D. (D.)—Santa Clara.
Murphy, J. E. (D.)—Del Norte.
Naphtaly, Joseph (D.)—San Francisco.
Newell, H. B. (D.)—El Dorado.
Oates, S. T. (D.)—Nevada.
O'Connell, W. (D.)—San Francisco.
Odell, John (D.)—Sacramento.
Pool, D. M. (D.)—Mariposa.
Power, M. H. (R.)—Placer.
Robinson, Wm. R. (D.)—San Diego.
Rockwell, E. A, (D.)—San Francisco,
Rogers, Geo. H. (D.)—San Francisco.
Romer, J. L. (D.)—San Francisco.
Ryan, Thos. P. (D.)—San Francisco.
Sammons, Benj. J. (R.)—Sierra.
Satterwhite, J. W. (D.)—San Bernardino.
Scarce, L. (D.)—Colusa.
Shoemaker, W. B. (D.)—Santa Clara.
Shores, Wm. (D.)—Siskiyou.
Stevens, R. D. (D.)—Sacramento.
Thomas, T. R. (D.)—Santa Clara.
Thurston, J. S. (D.)—San Joaquin.
Walden, Miner (D.)—Merced and Stanislaus.
Waldron, M. (R.)—Placer.
Williams, S. H. (R.)—Calaveras.
York, F. (R.)—Tuolumne, Mono and Inyo.
Young, J. R. (D.)—Calaveras.

The SENATE stands—Democrats, 26; Republicans, 11; Independent, 3. The ASSEMBLY—Democrats, 66; Republicans, 11; Independent, 3. Total number in Senate, 40; in Assembly, 80.

ELECTRO-PLATING WITH IRON.—Hon. Cassius M. Clay has returned from St. Petersburg with some fine specimens of iron electro-types, taken by the process of Jacobi and Klein. We have spoken of this process before. A thin coat of copper is first deposited, which, after the deposition of iron, is removed, either by mechanical means, or by immersion in nitric acid. The brittleness of the iron coat may be corrected by subsequent annealing. The Russian Government now employs the process in the printing of bank notes.

LATEST dispatches from Liverpool quote wheat at 9s. 10d.—an advance on previous quotations the past week.

A Problem.

Given—A certain railroad. *Required*—to travel over it without getting damaged.

A very simple problem to read, but one which has the peculiarity of becoming more and more difficult every day, and which demands a very complicated answer: for it is getting more and more apparent that in these times we must trust little in man, but rather find some mechanical means, by which the possession of any knowledge or care on the part of the employés of the road may be rendered unnecessary. Engineers have long been at work perfecting their answers, but the longer they work, the more, they find, is demanded. New points are discovered in which there are defects, and as the knowledge of these defects is gained at the expense of some one's life, the problem gets more and more interesting.

Lately, a very interesting paper on this topic was read before the New York Society of Practical Engineering, by Mr. C. Williams, C. E., and we give our readers the solutions of this gentleman on several of the important points. The main object of the paper was to point out such improvements in materials and construction as would overcome the principal difficulties.

Few articles manufactured of iron have to endure more than the rail. Not only is it subjected to a heavy load, but this load is imposed in a series of violent shocks; and, moreover, there is the wear and tear of the part of the rail exposed to the influence of the driving-wheels of the engine. The difficulty has been to impart to the surface of the rail the qualities which would enable it to resist injury in a degree commensurate with that exerted by the contiguous parts. Mr. W. recommends the use of a compound rail, or a rail constructed with a surface of steel, but with the bulk or body of soft iron, wherehy the fracture of both parts in the same place becomes almost impossible, while the hard steel surface gives it the required durability. Such rails would cost less than those wholly of steel, he as lasting, and much safer. He recommends also the same combination for axles—a hollow axle of soft iron with a steel core. The same can be applied to wheels, giving them steel tires. This has been adopted already for locomotives.

The delay of a few seconds in applying the brakes has often caused serious disasters, which otherwise might have been avoided. This delay, often protracted hy the tardiness of the brakesmen in responding to the alarm-whistle, can and ought to be avoided by the use of steam-brakes under the control of the engineer, who is, of course, the first to discover danger. The remedy proposed for avertiug disaster resulting from misplaced switches, is similar to that which has rendered accidents from open draw-bridges seldom, and is simply a legislative enactment that all trains shall slacken the speed to about four or five miles an hour on approaching any switch.

Mr. W. contends that the use of wood in constructing cars is an outrage on the progressive spirit of the age. Paper even, such as used for paper boats, would be better material, being less liable to catch on fire and impossible to splinter. But iron cars were the desideratum of the age, and would yet he forced upon railroad incorporations by an irresistible public sentiment. We have iron houses, iron steamboats and iron sailing vessels, and we ought to have iron railway coaches. We agree with Mr. Williams, and if we *must* take part in a collision or an overturn, we prefer to take our chances in an iron car, even if it does cost the railway company something more, which we are not as yet sure it would.

To prevent the cars from getting off the rails, it was proposed to lay a third or middle rail, somewhat higher than the others, and so constructed that, by means of friction-rollers on each side, the lateral motion of the cars would be prevented—a proposition not new, and which we are afraid will not strike most persons favorably.

The last principal suggestion was for deadening the force of a collision. The platforms are to be somewhat longer than is now common, and so arranged that they will he driven *under* the car floor against atmospheric or hydraulic buffers. Thus, before two cars can impinge on one another, the force of the collision will have to work on the buffers throughout the length of both platforms. For greater safety, a buffer car, or a car composed of a system of buffers, might he used with each train. With such a car, and buffer platforms, Mr. W. seems to think that a collision might occur without damage to the passengers or the passenger cars. We feel by no means so confident as Mr. W. on this point. The force of a train in rapid motion is immense, and this force is not always exerted in an exactly horizontal line, on accouut of the inequality of the track. This is shown by the telescoping of cars, for instance—one car being slightly raised and then dashed through the next above its floor. Now, this small rise alone would neutralize the effect of the buffers. We give this, not as the only objection, but as the one which first occurs to us on reading over the report. However, we leave the further discussion of the subject to others, who will find in Mr. Williams' paper much food for thought.

Mechanics' Institute—Monthly Meeting.

The regular monthly meeting of the Mechanics' Institute was held at their hall, on Post street, on Thursday evening last. Mr. Hallidie said that the Directors, to whom was referred the incorporation of the Institute, would tender a report at the next regular meeting.

In answer to a question by Mr. W. B. Ewer, whether the Institute had been benefitted hy the system carried on during the Fair in regard to season tickets. Mr. Hallidie stated that by affixing certain numbers to season tickets, denoting certain prominent characteristics of the holders, the Society had saved nearly $3,000.

It was moved by Mr. W. B. Ewer, that the Board of Directors be directed to tender to the Secretary, George Pardy, the originator of the ticket device, the sum of $200, or its equivalent in some testimonial, as a mark of regard for his services in the interest of the Institute. The motion was carried hy a unanimous vote.

Mr. Hallidie then introduced to the meeting Mr. Hubert Burgess, who gave a very interesting lecture upon Drawing and its various branches—prospective, ornamental, and scroll—illustrating the same in a very able manner on the blackboard. At the conclusion, a vote of thanks was unanimously tendered to him; also, an invitation to continue the subject at some future meeting; and he signified his willingness to do so, due notice of which would be given. Mr. Hallidie said it was their intention to continue these lectures, and make them as interesting as possible to all. Also, as soon as the Directors were able to command the means, to have a Polytechnic School connected with the Institute.

New Incorporations.

SUTRO TUNNEL CO.—Nov. 29th. Capital stock, $12,000,000; divided into unassessable shares of $10 each. Trustees: Samuel Merritt, Michael Reese, Abraham Seligman, Wm. H. Sharp, Joseph Aaron, John B. Felton and H. Baroilhet.

"LA SOCIEDAD LATI-HISPANO-AMERICANA."—San Francisco. Dec. 2. The objects of the Society are the protection of the Latin, Spanish, and American population of the State of California. Trustees: Marcelino Martinez, Vincente Arechiga, Francisco N. Guiterrez, Johu A. E. Green add J. R. Pico.

MARTIN VALLEY FLUME, WOOD AND LUMBER CO.—Nevada County. Dec. 2. Capital stock $120,000.

CORRECTION.—In our illustrated article last week, under the sub-head of "Costs of Mining," we should have said: "The whole costs of miuing varies from £2 to £100 per fathom on the vein." Several lines below, "12 lbs. of tin" should have read "12d.," and "$4" was written "4s."

The Manufacture of Preserves.

Primitive Methods and Causes of Preservation.

All articles of food beiug organic are subject to decay, the reason being that their chemical elements are held loosely in combination, and are continually seeking to form new and more stable compounds. It requires no very great power of observation to perceive that the change varies under different circumstances and influences, and it is not uninteresting to see how the preservation of food has been gradually perfected from early times up to the present day. One of the simplest facts, and the most easily seen, is that the presence of water, or of almost any fluid, facilitates decomposition. Hence at an early date, and among uncivilized nations of the present day, the remedy of driving off moisture by fire or by the heat of the sun was readily recognized. The Indians treat thus buffalo and deer meats. The use of salt—which abstracts moisture from bodies in contact with it—has long been practiced, and salted meats and fish have long been common. Then sugar was found to have a similar effect. The use of vinegar was shown to preserve certain articles by rendering the albumen—the easiest compouent to putrefy—inert; but articles thus preserved are difficult of digestion, and are used principally as appetizers; as pickles, etc.

The above remedies, with the exception of vinegar, are applicable only to animal food; and experience soon taught that complete abstinence from vegetable acids induces scurvy. Hence attention was paid to the preservatiou of fruits and vegetables. For this it was found that common air or oxygen must be excluded. Thus, grapes can be kept a long time in sawdust, provided the skin is not broken. And now a great step was taken. Some 60 years ago we find that a Frenchman, M. Appert, was awarded 12,000 francs by the French Government for inventing the

Parboiling of Provisions

And then confining them in air-tight cans. His process, as improved by a couple of English firms, is now in general use, and has proved of immense importance. The essential points of the method are these: that the article to be treated is placed in an open can and boiled a certain length of time. The can is then immediately closed hermetically, while the hot gases still prevent the entrance of air. For greater safety the closed cans are again treated to a boiling, the object of this being to change any oxygen which may possibly exist in the can to carbonic acid.

The preservatiou of vegetables, fruits, fresh meats, etc., immediately began to be an important branch of industry, and this business has been continually increasing.

In San Francisco

Several firms are engaged thus, and a walk through the large manufactory of Messrs. Cutting & Co.—the largest and oldest of these firms—convinced us that the work was done on a larger scale than we had previously imagined. At the time of our visit tomatoes were being canned, and in the packing room were seated at tables workmen—of whom, in the busiest season some 500 are employed—engaged in peeling and cutting this fruit, each table being under the immediate superintendence of a foreman. The peeled tomatoes were placed in the cans and carried by a man to an adjoining room, where the cans are placed in large tanks partly filled with water, which is brought quickly to the boiling point by the introduction of steam. After a short time the cans are removed, and immediately closed. Being of an inquisitive turn of mind, and not having partaken of any lunch previously, we had determined to test the article before and after cooking; but unfortunately we had satisfied our curiosity too fully with the unboiled substance, and forgot to insert our digits into the hot can.

The cans are now transferred by man and steam power to the upper story of the adjoining warehouse. Here they are tested and labelled with the handsome chromolithographs which are intended to render the exterior as attractive as is the internal substance. To box up the cans and label the boxes is all that is required to make everything ready for the market.

Not an unimportant part of the business is the

Manufacture of the Cans,

Which is carried on in the story above the packing room. Here are engaged some 45 men—one class cutting the tins into sheets of the proper size, another cutting out the blanks, which are punched into the right shape for the tops and bottoms; still another rolling up and soldering the cylindrical body of the can. Here is a man with lightning rapidity attaching the top to the body, inserting a ring of solder, and dipping the can into resin, which adheres to the rim. Place the can on the patent stove invented by Mr. Cutting, and the solder and resin are immediately melted. Then attach the bottom in a similar manner, and the can is made. The quickness of the whole process, due greatly to the economy of time attained by the use of the patent soldering apparatus, is such that these 44 men can turn out 10,000 cans in one day.

Out in the yard we hear the coopers pounding away on casks and barrels for the pickles, the cider, and the vinegar. In former times, with proper visionary power, we might have seen glassblowers—some blocks away—making the bottles; but this branch of the business has been taken by other parties and extended.

Preserved Salmon.

In addition to the manufactory in this city, Messrs. Cutting & Co. have quite a large establishment at Eagle Cliff, on the Columbia river, where large quantities of salmon are packed. Hence some 60 men are engaged in all the different branches of work, from the catching of the fish to it preparation for market. This article is getting to be more and more extensively used as people find how well all the delicate flavor can be maintained.

Think of the farmers around Oakland and Alameda, up at Napa, in Sonoma and Santa Clara counties, engaged in raising the thousands of baskets of peaches, pears and plums, the tons of tomatoes, of cucumbers, of currants, blackberries, cherries, grapes and other vegetables and fruits; think of the wood-cutters in Oregon and Michigan cutting the fir and the oak for the barrels; think of the miners in Cornwall digging out the ore, smelters reducing it to metallic tin; of the many heads and hands engaged in providing the preserves you are eating; and if you please you can remember the thousands of stomachs which are supplied with sustenance—the result of one man's thinking some 60 years ago.

From the Pacific to the Atlantic.—The Post-Office Department is keeping a register of the time occupied in the transmission of mails between Boston and San Francisco. The time has been gradually shortening, since through trains have been established to this city. The average time is now about seven days and nineteen hours. The time between New York and San Francisco now averages about six days and fifteen hours.

San Francisco Hotels.—San Francisco is in a fair way to be pretty well supplied with "first-class" hotels. We have now the Occidental, valued at $1,000,000; the Cosmopolitan, $975,000; the Lick House, at $800,000; and we shall soon have the new hotel, now rapidly approaching completion, on the corner of Market and New Montgomery streets, which will cost $1,000,000. This will do very well for a 20-year old city of 160,000 inhabitants.

Mining in Placer County.

[Written for the Mining and Scientific Press.]

Editors Press:—When at Colfax, I visited the Rising Sun Q. M. Co., which has a small five-stamp mill, but it was not running at the time I was there, having suspended for a short time to make repairs. This company has made some very excellent runs within the past six months. Their rock looks well, shows much free gold, with good-looking sulphurets, which also assay well. They have done but little as yet towards developing their mine, as their shaft is down only about twenty feet.

Iowa and Wisconsin Hills.

From Colfax I went to Iowa Hill, about half a mile from which I visited the cement claim owned by the Morning Star M. & M. Co. They have a fine ten-stamp mill, built by J. G. Bishee, which commenced crushing gravel about three months ago. The mill is run only during the daytime. The foreman, Mr. J. Mitchell, accompanied me through the mine. Passing into the tunnel about 400 feet, we found some eight or ten miners picking away at the cement. The mine is worked night and day. Gold was readily discovered in the cement. I was informed that there are twenty-four shares in the company, and that a majority of the shareholders are workingmen. They clean up from fifty to one hundred ounces. [Our correspondent does not say how often.] They find that it pays to work from eight to ten feet into the bed-rock in this mine—a very unusual occurrence.

There are other placer claims near this locality, owned by W. Wisler and others, upon which preparations are being made for winter's work. At Wisconsin Hill, two miles distant, there are some very large claims; but they are not worked at present for want of water.

Mr. O. J. Spencer's (Mt. Pleasant) sawmill is actively at work sawing out blocks for sluice boxes. These blocks are from two to three inches thick, and are affixed to the sides [and bottoms?], by the use of which the boxes are made to last three times as long as without. The first cost is a little more, but the saving in the end is considerable.

Damascus.

Twelve miles more brings the traveler to Damascus, another small mining town. Here I found two companies operating quite extensively. The Mountain Gate Co. have an old tunnel in some 3,500 feet, and have just completed a second, lower down the hillside, which is now in over 3,000 feet, where the cement is paying well. The mine is owned by twenty-three shareholders, every one of whom is a shareholder, and does his regular day's work upon the claim. Twenty-two were at work the day I visited the mine. The last clean-up, after a two weeks' run, gave them 120 ounces of gold. They are not now employing any extra hands; but soon will do so. Such a company is bound to succeed. There is no business in the world where coöperation, under good management, will succeed better than in mining.

The next mine visited was the Lewis claim—an old claim, containing very hard cement. The company have a tunnel in some 700 feet. They have at present only six men employed. The old company erected a mill, some years ago, at a cost of $30,000. The cement is taken out and dumped in a pile, where it is left eight or ten days to "stocken," when it is worked in sluices. I understood it was the intention to commence crushing soon; but why they do not crush at present I did not learn. I see no reason why the claim should not be a valuable one.

Michigan Bluffs.

From Damascus I passed on to Michigan Bluffs, where I found the various companies making extensive repairs and getting ready for winter work. Messrs. Erman & Co. have paid $19,000 for a ditch, and bought some very valuable mining ground for $3,000. They have half a mile of main tunnel, besides numerous side drifts. There are many miners working, and doing well at the river, and up the cañon. Mr. J. W. Richards, a well known miner of this place, recently fell, and catching at a large rock, it rolled over upon him in such a manner as to break his leg in three places. He expects to be all right by the time the water comes in for winter work.

M.

Beauties and Novelties in Southern Hawaii.

The soft tradewind murmured up and down through the deep forests, or lighter groves of limes, guavas, oranges, and bananas. There were blossom-filled vales, where, if some *genie* should suddenly envolve himself from the morning mist, you would not be in the least surprised; nooks, where the heavy odors of tropic perfumes lingered; streams, gurgling in and out, bearing up large, sleepy lilies, under whose broad, white leaves the gold-fish rested. You stop and watch these shining creatures in their own home and element. All that you have seen before were imprisoned exiles, slaves, in the make-believe liberty of the *aquarium*. They lie, in gleams of gold and silver, on the brown pebbles at the bottom, whose woudrous glows of brown and ochre you can see through the lucent water. Splendid parasites leap from branch to branch, twining the woods together in flowery bands, or running over the ground, making patches of violet, carmine, and gold. And ever, at intervals, from some breezy slope, you see the sea, spread out in its sublime magnificence, bent over by a sky of such dreamy loveliness, such pure beauty, that the divine may well dwell beyond it.

Seven miles up this valley, on a sunny afternoon, the earth suddenly opened in a fissure of two miles in length, and from it rose a vast column of liquid lava, jetting up in conical spheres of flame over a thousand feet in height, and pouring its resistless tide of destruction to the ocean. It swept everything in its fatal course; houses, with its doomed inmates, horses, cattle, and whole herds of goats. The story of the white settler's family is well known: how, just ten minutes after they escaped from their home, the fiery sea swept over it. We rode over the spot a few weeks later, and then could see the scarlet fire through the dark fissures. So singularly swift does surface lava cool, retaining its fires beneath the crust, that trees at the edge of a lava stream will have only those branches burned that are nearest to it.

The upper valley looked exactly like the bed of a great crater. There was the same sea of black billows, storm-lashed and frightful, covered with the same curling blue smoke; there were the same chasms gaping everywhere, though here not so great in depth, but from which oozed the same sulphurous gases.

Often, when the crust cracked and yielded beneath our weight, we expected to go through. Some of the party declared that it was a temptation of Providence, and wanted to go back; but the Kanakas rode on fearlessly, and we had come too far to be swerved by possible danger. So on we went, though it was pitiful to see the bleeding legs of the panting horses, scorched and cut by the hot, sharp lava. In many places, the heat was so intense that we could scarcely breathe; and having our mouths muffled, for fear of sulphur steam, we went through an hour's semi-stifling before the goal was reached.

It was a long, hideous chasm, emitting rapid columns of steam and smoke, and holding as yet its fires in active force. We approached as near as we dared, and threw blocks of cool lava into it; but the smoke was too thick to see far down, and the roar too great to judge its depth by the falling rocks. We were obliged to leave this opening very soon by a cloud of nauseous gas; and this, as the natives assured us, would be swiftly followed by other deadly poisons.

We followed the course of the main torrent back until it divided into four streams, reaching the ocean in long, wide channels of broken, smoking lava. One may judge the force of this eruption by the fact of its forming a new beach, extending a mile into the water, at the extremity of which an island was thrown up—black, frowning desolate—looking like one of the monster cones transplanted from Kilauea. Nothing is more awful than a landscape black with lava, or gray with ashes and pumice cinders. It rises in huge ridges, heavy boulders, and inky breakers, gleaming with metalic lustre in the sun. It spreads far and wide from mountain-base to the sea, a dark repetition of sunken pits, fresh crater-beds, yawning chasms of hideous danger, walls of broken lava, and whole miles of volcanic sands, ashes, and "clinkers." The very mind wearies of it at last, and one wonders how the sweet breeze can blow over it or the calm heavens look down as serenely as if it only gazed on pastoral scenes, dotted with drowsy goats and sheep, and glittering with morning dew.

—"*In Lava Land*," *Overland Monthly*.

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PERFECT ACCURACY NOT ATTAINABLE.—No two persons do a given thing exactly alike. No two see a telescopic appearance with the same quicknoss. In astronomical observation the habitual error of any given person in recording the instant of an event is ascertained as nearly as possible, and the formula expressing it is called the *personal equation*. This is allowod for by reducing all observations, and will generally be found pretty nearly constant. It amounts in some cases to one-half a second.

The British mint allows twelve grains to the troy pound for variation in weight in coining; and this may be taken perhaps as the measure of the nearest approach to mechanical accuracy in coining. It is fifteen seventy-seconds of one per cent.

The variable textures of the materials used and the different thermometric and hygrometric conditions of materials and tools, all tend to defeat accuracy. There are scarcely any two days in the year when a boxwood rule is precisely of the same length, and the variations in metallic rules are even groator. Surveyors find errors creeping into their measurements from the expansion of thoir chains; and we might go on to show that the material or implement can be made entirely free from one or the other of these adverse influences.—*Scientific American.*

NOW AND THEN.—One hundred years ago it took six months to fix quicksilver to glass, for mirrors; that object is now better accomplished in forty minutes!

CLARENCE KING found a mountain opposite Tulare lake, in Kern county, 17,000 feet in height.

BOOK ON EARTHQUAKES.—A Treatise on Earthquake Dangers, Causes and Palliatives, by Prof. Thomas Rowlandson, comprising Earthquake Dynamics; Earthquake Waves, Sound that attends Shocks, Lime, Mortar, etc., Cosmogony and Seismogony, Phenomena of the Neapolitan Earthquake of 1857, and General Observations respecting Structural Arrangements. Published by Dewey & Co., Mining and Scientific Press Office, San Francisco, 1869, containing 96 pages. Price 50 cents, postage free.

TREATMENT OF REBELLIOUS SILVER ORES, by Charles H. Aaron—a pamphlet of eight pages, of concise reading, of practical value to parties interested in the subject. Printed and sold by Dewey & Co., at this office, for 25 cents, post paid.

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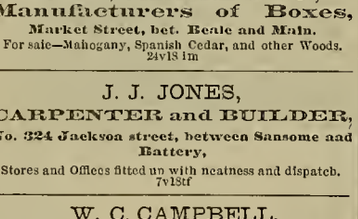

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The highest market price paid for ores assaying 10 per cent. and upwards. 23v17qr

DR. H. J. PAINE. ROBERT CULLEN.
PAINE & CO.,
Mine Commission Merchants,
No. 225 BUSH STREET,
SAN FRANCISCO.
Will negotiate the sale of Mines and receive consignments of Ores from Battle Mountain and all parts of the Pacific Coast. They will sell or work the Ores, as the consignors may direct. They guarantee to pay the highest prices for Gold, Silver, Copper, Galena, Lead, Zinc, Antimony and Tin Ores, on the shortest notice. They will make test or working Assays for prospectors at a very low figure. They will also receive orders and furnish Miners' and Farmers' Supplies, including machinery of all kinds, at the lowest prices. N. B.—All correspondence with us will receive prompt attention. 10v19-3m

WALTHAM WATCHES.
Let every one who wants a Watch, read this carefully
Especially if in some remote out-of-the-way place.
Now that the railroad is open, we propose to give the residents of CALIFORNIA the opportunity of getting single genuine Waltham Watches at the
Lowest New York Wholesale Prices.
We sell more Waltham Watches than any other establishment in the country, either wholesale or retail; we send great numbers to every section of the country by Mail and Express, carefully packed, and in perfect running order. Our plan is this: You want a Watch, and see our advertisement; now, we want you first to write to us for our Descriptive and Illustrated Price List; we will send it, postpaid, by return mail. It explains all the different kinds, tells the weight and quality of the cases, with prices of each; you then make a selection of the kind you prefer, and send us your order. We will then send you the Watch by Express, with the bill to collect on delivery. We give instructions to the Express Company to allow you to open the package and examine the Watch; if it suits, you can pay, and take it; if not, you are under no obligation to receive it; and if it is taken, and afterwards does not prove satisfactory, we will exchange it, or
REFUND THE MONEY.
As an indication of the Prices, we will quote one Watch from our list. The P. S. BARTLETT, *Lever Movement, with Extra Jewels, Chronometer Balance, Patent Pinion, Patent Dust Cap, and all the other late improvements, in a Solid Coin Silver Case,*
$28 in Greenbacks, or about $20 in Coin,
All the other kinds, both gold and silver, in the same proportion. Do not order a Watch till you have sent for a Price List, as it contains a great deal of information regarding these Watches that will enable you to make an intelligent selection. Don't forget, when you write, to state that you saw this advertisement in the MINING AND SCIENTIFIC PRESS, and you need not put in stamps for return postage. Address in full,
HOWARD & CO.,
Jewelers and Silversmiths, 619 Broadway, New York.
We refer, by permission, to
Messrs. WELLS, FARGO & CO., N. Y. and San Francisco.
I. W. RAYMOND, Esq., T. R. BUTLER, Esq., B. C. HOWARD, Esq., San Francisco.
W. S. HOBART, Esq., Virginia City, Nevada.

OCCIDENTAL
Insurance Company,
OF SAN FRANCISCO.
Cash Capital, - - - - - - - $300,000
GOLD COIN.
Office S. W. corner of Montgomery and California streets.
Fire and Marine Insurance.
All Losses paid in U. S. Gold Coin.
CHR. CHRISTIANSEN, President
B ROTHSCHILD, Secretary. 20v17-3m

Chicago Advertisements.

STEELE & YANTIS,
Newspaper Advertising Agents, Dearborn Theater Building, Chicago, Ill.,
Are authorized to receive advertisements for the Mining and Scientific Press at our lowest rates, and also for any Daily, Weekly or Monthly Newspaper or Magazine in America, at publisher's lowest prices. Estimates for any number of papers desired furnished gratis. 11v19

T. W. BAXTER & CO.,
General Mill Furnishers.
Leffel, Bryson, Bodine and Chicago Turbine Water Wheels; Mill Stones and Bolting Cloths. All kinds of Cleaning Machines, including Smutters, Separators, Packers and Bran Dusters. Scales, Belting, Pecks, etc. Mill Irons and all kinds of Castings. P. O. Box, 274.
CHICAGO, ILL. 11v19-3m

H. C. SILSBY & CO.,
MANUFACTURERS OF
ROTARY STEAM FIRE ENGINES,
Hose Carriages, Reels and Carts, Power, Bronze and Hand Pumps.
No. 133 La Salle Street, - - - - - Chicago.
Established at Seneca Falls, N. Y., in 1845. 11v19 3m

Auction Notice.

We will sell at Public Auction, to pay storage and charges, the following described Merchandise, at Battery Street Warehouse, 819 Battery street, on MONDAY, DECEMBER 27, 1869:

	NAMES.	AMOUNT.
2 cases	E. J. Swift	$63 00
5 bdls. brackets	H. Chapman	59 50
3 cases	E. G. Whitcomb	132 00
2 bags quartz	Geo. Roberts	39 50
1 tub & cont's; 1 bag	C. S.	41 00
1 sack ore	John Nightingale	38 50
1 ½ cask	F. C. Belden	37 50
1 case	Capt. J. Porter	37 50
1 sack rock	J. M. Buffington	36 50
1 case	J. F. Sherwood	36 50
1 firkin	D. O. C.	35 50
6 sacks quartz	E. M. R.	61 1
1 sofa frame; 3 pkgs.	W. L. Needman	35 50
1 box (H. P.)	H. Palmer	36 50
1 case (J. M.)	J. Mosheimer	36 25
1 sack cement	McDonald	33 50
1 sack rock	H. A. Gleson	35 50
1 keg wine	Witts	34 50
1 cask	A. B. Earlo	51 30
1 lot traps	Mrs. Carpenter	62 25
1 case	W. Krouse	31 50
1 tierce	N. Williams	33 00
1 bale sacks	J. M. S. Taylor	31 50
1 sack rock	E. N. Robinson	30 50
1 case	S. Loffman	30 50
6 small cases	H. Hanheimer	49 00
2 cases	S. F. B. Factory	29 75
1 case	E. W. Roberts	29 60
1 box	Chas. E. Lang	28 50
1 box merchandise	C. H. & Co.	28 50
1 trunk	Chas. P. Wilder	29 50
1 lot castings, shafts and wheels	Palmer, Knox & Co.	128 00
1 box	O. R. Woodman	27 25
1 case	A. H. Wilber	29 50
2 sacks quartz	W. H. Smith	27 00
1 ½ cask	M. B.	21 50
1 bdle deer skins	L. Deechen	21 50
2 cases	G. S. Beardsley	21 50
2 hay forks	John Findley	20 50
1 case	Mrs. A. K. Turner	21 00
1 chest	H. Williams	19 75
4 pkgs pipe and iron	S. P. Roberts	32 85
1 bbl whisky	B. Mendersoll	21 00
1 box	J. & F. & Co.	20 50
2 iron hubs; wire cl'th	Treadwell & Co.	20 00
1 pkg castings	Wm. Lynn	20 25
1 trunk	Mrs. Willis	21 00
1 case	S. W. & Co.	18 50
1 box	L. Doneri	19 50
1 barrel	J. H. Seadent	19 00
4 boxes	G. A. Dyson	63 75
1 case bacon	H. Rosstent	18 75
1 case	Locke & Montague	30 75
1 case	Cal. Fuse Co'	19 50
1 bbl wine	Frank Glas	17 00
2 bundles	Order	16 50
1 bdl sash	T. J. Hughes	30 79
1 box	S. S. Allen	30 00
2 cases	S. Hamark	17 50
1 case	Thos. Thyser	44 00
6 boxes	Union Tel. Co.	31 00
10 cases	L. P. & Co.	22 75
1 trunk and 1 case	A. M. Peck	23 00
24 bbls sal soda	Order	95 00
4 pks (D in diamond)	Order	68 60
1 chest	J. H. Treadwell	50 75
2 cases	C. D. Land	30 00
1 bundle	Dr. Matthews	49 25
1 bale	W. Shears	47 50
2 cases and 1 hf bbl	Mrs. A. Holmes	43 00
1 case	Orik Johnson	49 75
1 case	Mrs. Flannigan	44 90
1 box	J. H. O'Brien	24 25
1 chest	W. H. Dalrymple	61 12
1 case	J. S.	23 25
1 trunk and 1 box	W. H. Herrick	51 36
1 case and 1 trunk	Mrs. S. P. Penney	49 40
1 box tobacco	J. A. D.	20 00
1 trunk	M. C. Parker	19 00
1 case and 1 bag	S. L. Rogers	20 50
1 keg wine	J. F. Hubbard	17 50
1 box	Lams & Co.	29 25
3 cases	H. H. S.	45 00
1 bellows and 1 anvil	L. C.	24 50
1 bale hops	B. S. & Co.	47 50
1 case	D. M. Wheaton	27 00
3 cases	S. S. Ingham	49 50
1 case	H. Davenport	60 60
1 box	J. W. Jenkins	22 50
5 kegs and 1 box	J. M. Sutton	60 00
5 sacks ore	Valentine & Bro.	39 00

W. A. HOLCOMB & CO.
S. L. JONES & CO., Auctioneers. 22v19-5t

COKE! CHEAP FUEL!
Further Reduction in Price!
For quantities less than 100 Barrels, 75 cents per barrel; for larger quantities, 70 cents per barrel, at GAS WORKS, corner of Howard and Fremont streets, and corner of Second and King streets, 21v19

[A CARD.]

Statement of the Giant Powder Company Regarding the Late Explosion.

EDITORS PRESS :—The Board of Trustees of the Giant Powder Company deem it due to their customers and the community at large that an official statement should be published, in connection with the explosion which took place at their works on Friday night last, November 26th.

The powder is now used so extensively throughout this coast and the demand for it is increasing so rapidly, that the facts connected with the complete destruction of the company's factory by the recent explosion should be placed before the public, in order to give them all the knowledge possible of the nature of this new and powerful explosive, so that the community may know whether or not it is really a safe article to be used.

Giant Powder is exploded with a peculiar percussion cap attached to an ordinary piece of fuse; the Company furnish these caps, and up to the 1st day of November, 1869, had sold over half a million of them. This number of caps represent about 500,000 different explosions or blasts. The powder with which these blasts have been made has been manufactured at the works of the Company, and has been handled and transported in every possible manner, on steamers, sailing vessels, railroads, stage coaches, express wagons, freight wagons and pack animals, and has, of course, been subject to all the risks attending such varied transportation and use. As the powder was a new and untried article, it followed that every person handling or using it commenced with entire ignorance of its nature, and of course the article was liable to meet with all possible accidents; yet up to the present time (although blasts have been fired from ¼ ounce up to 1,200 pounds at a time), but three accidents have occurred, all of which were explosions produced by the percussion cap in the ordinary way. In one case the instantaneous burning of a defective fuse caused the blast to explode before the person injured could get away from it. The other two accidents were caused by striking a pick into holes loaded with powder and cap, and thus exploding the cap and of course the powder. Thus, it will be seen, that in handling and transporting the powder in all possible ways, and making over a half million of blasts, not a single accident has occurred from an explosion produced in any way whatever, except the usual way prescribed—with a percussion cap made expressly for that purpose.

This is certainly a very extraordinary record, and would establish the powder as being infinitely more safe than any other known explosive. It is therefore of the utmost importance that we should look into the facts connected with the late explosion at the factory in order to ascertain whether it confirms or upsets our previously formed opinions.

The Giant Powder Works were situated on the side of a hill; excavations were made in the hill, forming a series of three benches, over which the main building or factory, 60 by 25 feet, was erected, the upper floor being some 25 feet above the lower one.

Nitro-glycerine is used in making the powder. The raw materials, viz: glycerine—nitric and sulphuric acids—were taken over the road along the side of the hill to the upper floor of the factory where they were converted into nitro-glycerine, which, as soon as made, was drawn from the mixed vessel to the floor below, and from there to the next; on each floor something being done toward perfecting it until it arrived at the lower end of the building, sixty feet from where it started.

At the time of the explosion there were about 1,300 pounds of nitro-glycerine in the works, some on each of the three floors. About 75 feet from the lower floor was a cottage house, in which were sitting three men (the Superintendent, Mr. Bussenius, the Assistant Superintendent, and the teamster). One of these men, the Assistant Superintendent, alone survives, and is not seriously injured. His statement is that he saw a bright light in the upper end of the factory, as if it was on fire inside. (They had left the factory but an hour previous, when there was no sign of fire; fire was never used in the building.) On seeing the fire he gave the alarm, and all three rushed for the door, in a direction away from the factory. The survivor only succeeded in getting out of the door before the explosion took place; which explosion threw him some distance from the door, without serious injury, although he was, for a time rendered totally unconscious. The other two men were caught under the ruins of the house, which was totally demolished and the ruins set afire from a stove burning in the house.

When nitro-glycerine explodes, the result is instantaneous; no warning is given in the way of a light, and no time intervenes for any person to run away from the effect. The seeing a bright light in the factory before the explosion, and having time to run out of the cottage, is positive proof that there was fire. It is now utterly impossible to know the cause, and perhaps it may forever remain a mistery; every particle of the 1,300 pounds of nitro-glycerine on the different floors was exploded, reducing the building almost to powder.

About 65 feet from the factory, containing the nitro-glycerine, was a building in which were stored some five thousand pounds of Giant Powder; some of it was loose, in bins and tubs, some in paper-catridges, and some in boxes. This building or store room was completely demolished, the tubs filled with loose powder were blown to pieces; a heavy truck resting against the building, and close to the powder, and every spoke blown out of the wheels, and the tongue thrown hundreds of yards away, BUT NOT A POUND OF GIANT POWDER WAS EXPLODED. It was all found amongst the remains of the demolished building, and has all been boxed up since the explosion, ready to ship away to customers.

From these facts, we have the most extraordinary evidence of the safety of this non-explosive; and whatever danger there may be in manufacturing, there is certainly greater safety in handling, transporting and using Giant Powder than any other explosive known.

The works will be immediately rebuilt on a much larger scale; a new location is situated where there will be ample room to separate the buildings and take every precaution for future safety, and the Company hopes soon to be able to supply their customers as punctually as they did before the explosion and destruction of their works.

L. L. ROBINSON, EGBERT JUDSON,
HENRY BRICKWEDEL, THOMAS VARNEY,
J. N. RISDON.
Trustees of the Giant Powder Company.
San Francisco, December 2. 1869.

PAIN KILLER, after a thorough trial by innumerable living witnesses, has proved itself THE MEDICINE OF THE AGE. It is an internal and external remedy. One positive proof of its efficacy is, that its sales have constantly increased, and wholly upon its own merits. The effect of the Pain Killer upon the patient when taken internally, in case of Cold, Cough, Bowel Complaints, Cholera, Dysentery, and other affections of the system, has been truly wonderful, and has won for it a name among medical preparations that can never be forgotten. Its success in removing pain, as an external remedy, in cases of Burns, Bruises, Sores, Sprains, Cuts, Stings of Insects, and other causes of suffering, has secured for it such a host of testimony as an almost infallible remedy that it will be handed down to posterity as one of the greatest medical discoveries of the nineteenth century.

REDINGTON & CO. and HOSTETTER & SMITH, San Francisco, General Wholesale Agents. dc4

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons,

Sore Throat,
Sudden Colds,
Coughs, Etc.

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

PHOTOGRAPHY.—For CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

RETURNED.—Dr J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

New Mining Advertisements.

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Sharp	3	100	$50 00
J L Schroeder	6	100	50 00
A Caselli	6	100	50 00
J Landsmann	13	100	50 00
C Martin	7	50	25 00
G Mahe	8	50	25 00
W H Hagermann	9	50	25 00
J C Yunge	10	50	25 00
G F Sharp	12	50	25 00
S Mayer	11	50	25 00
H Dreschfeld	14	145	72 50
L Rosenbaum	43	50	25 00
L Adler	47	5	2 50
C Wennerholz	20	10	5 00
W A Ilse	42	33	16 50

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction by J. Middleton & Son, at their salesroom, 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary.

Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

La Blanca Gold and Silver Mining Company.—Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of November, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Sonneberg, L B	19 282	12	$12 00
Schleicher, Jacob	84	15	15 00
Schleicher, Jacob	105	5	5 00
Schleicher, Jacob	159	5	5 00
Schleicher, Jacob	308	5	5 00
Schleicher, Jacob	372	5	5 00
Schleicher, Jacob	389	11	11 00
Wertheimer, E	227	10	10 00
Hildebrandt, G W	222	10	10 00
Hildebrandt, G W	238	10	10 00
Hildebrandt, G W	244	10	10 00
Hildebrandt, G W	262	10	10 00
Hildebrandt, G W	347	8	8 00
Hildebrandt, G W	368	2	2 00
Hildebrandt, G W	435	2	2 00
Hartmann, Charles	136 328	12	12 00
Klivesahl, E W	148	5	5 00
Klivesahl, E W	269	5	5 00
Klivesahl, E W	330	1	1 00
Klivesahl, E W	330	5	5 00
Klivesahl, E W	397	5	5 00
Klivesahl, E W	400	3	3 00
Trenkle, E	456	6	6 00
Diefenbacher, Eliza	533	6	6 00
Thyes, Adolphine	534	10	10 00
Thyes, Hermann	535	109	109 00
Mayrisch, Mario	366	1	1 00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of November, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Tuesday, the twenty-first day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOSEPH GOLDMAN, Secretary.

Office, No. 312 Front street, San Francisco, Cal. dec4

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. shares.	Amount.
J L Schroeder	5	40	$20 00
A Caselli	6	40	20 00
J Bandmann	7	40	20 00
C Martin	8	20	10 00
G Mahe	9	20	10 00
W H Hagermann	10	20	10 00
J C Yunge	11	20	10 00
S Mayer	14	20	10 00
H Dreschfeld	15	60	30 00
L Rosenbaum	47	20	10 00
G F Sharp	12	20	10 00
H Dreschfeld	49	5	2 50
W H Sharp	3	40	20 00

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary.

Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

Mining Notices--Continued.

Alleghany Consolidated Gold Mining Company, Location of Works: Sierra County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twenty-fourth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Tompkins	9	1500	$450 00
A L Whitney	32	185	55 50
Charles Adams, Trustee	12	10 0	300 00
I N Thorne	13	125	37 50

And in accordance with law, and an order of the Board of Trustees, made on the twenty-fourth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 37, New Merchants' Exchange, on the fifteenth day of November, 1869, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. oc30

POSTPONEMENT.—The above sale is hereby postponed until Monday, the sixth day of December, 1869, at the same hour and place. By order of the Board of Trustees.

no20 J. M. BUFFINGTON, Secretary.

Bucklin Silver Mining Company.—Location of Works: White Pine District, White Pine County, Nev.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the thirtieth day of September, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J W Bucklin	2	500	$25 00
J W Bucklin	3	500	25 00
J W Bucklin	4	500	25 00
J W Bucklin	31	300	15 00
G W Rogers	19	100	5 00
Joseph Lawler	35	200	100 00
Thos H Brooks	37	100	5 00
M Emms Faber	32	100	5 00
Abram Moger	no cert. issued	1612	80 60

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of September, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No 40 Merchants' Exchange, California street, San Francisco, on the thirtieth day of November, 1869, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

S. D'ELL STONE, Secretary.

Office, No. 40 Merchants' Exchange, California street, San Francisco. no13

Glenwood Mill and Mining Company.—Location of Works: Greenwood, El Dorado County, Cal.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the twelfth day of October, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. certificate.	No. Shares.	Amount.
Balch, S M	not issued	70	$21 00
Jancson, L	24	70	21 00
Keenan, W	not issued	70	21 00
Wells, F H	not issued	75	22 50
Wood, J H	19	140	42 00
Wood, J H	31	67	20 10
Wood, J H	not issued	105	31 50

And in accordance with law, and an order of the Board of Trustees, made on the twelfth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on Tuesday, the seventh day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

O. D. SQUIRE, Secretary.

Office, 418 California street, San Francisco, Cal. no20

Pocahontas Gold Mining Company.—Location of Works: Mud Springs, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of November, 1869, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 419 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twelfth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.

Office, 419 California street, San Francisco, Cal. no20

Taylor Mill and Mining Company.—Notice.—The Annual Meeting of the Stockholders of the Taylor Mill and Mining Company, for the purpose of electing five (5) Trustees to serve for the ensuing year, will be held at the office of the Company, No. 520 Montgomery street, San Francisco, on MONDAY, the thirteenth day of December, 1869, at four o'clock P. M.

SAM'L S. MURFEY, Secretary,

San Francisco, November 16th, 1869.

Pilot Mining Company—Location of Works: White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of November, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room No. 7, 423 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the third day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighteenth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. M. HARRON, Secretary.

Office, Room No. 7, 423 California street, San Francisco, California. no27

Silver Star Consolidated Silver Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1869, an assessment of fifteen (15) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchants' Exchange, California street, San Francisco. no13

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of November, A. D. 1869, an assessment of thirty cents per share was levied upon each and every share of the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 520 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 17th day of January, 1870, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURFEY, Secretary.

Office, 520 Montgomery street, over Sather's Bank, San Francisco, California. no20

Price $1. Cloth Binding.

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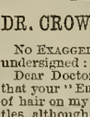

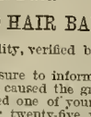

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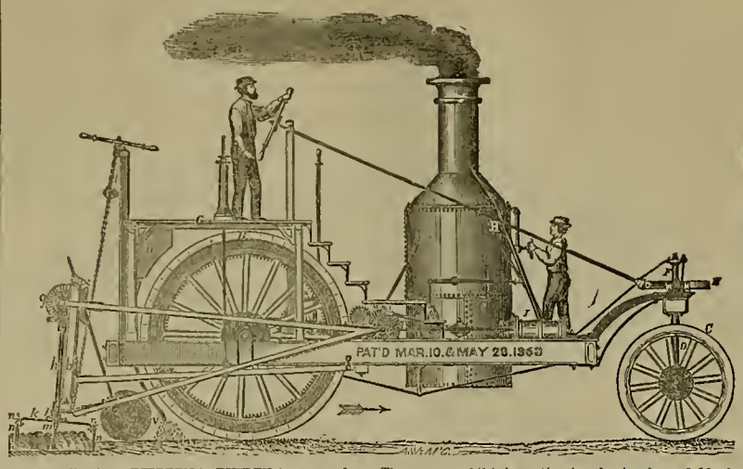

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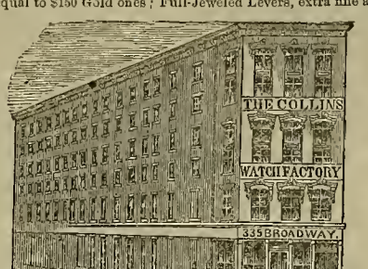

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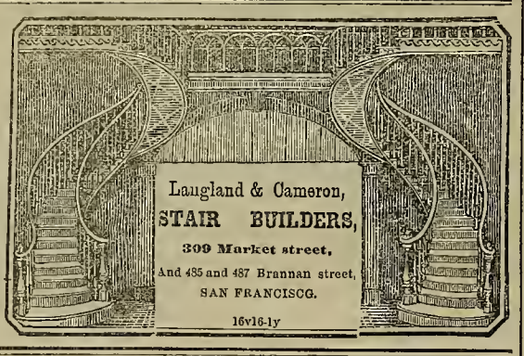

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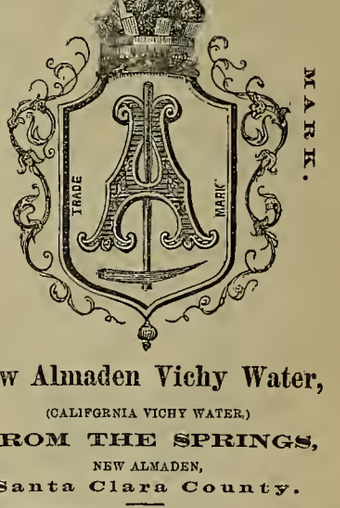

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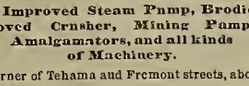

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"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine, but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 30-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 50 or 60 horse power with ease and economy. Awarded silver medal. Wm. Burnett, Monty Fletcher, John Myers."

Pickering Governors, Machinists' Lathes,

Planers, Shapers, Drills, Etc.,

On hand and for sale. Drawings furnished free of cost. Orders promptly attended to. A complete stock of fittings on hand.

☞ We are prepared to furnish all kinds of Machinery at short notice, as our facilities are unequalled on the Pacific Coast.

H. J. BOOTH & CO.

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers,** with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

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HUGH H. LAMONT. WM. CALDWELL.

CYCLOPS MACHINE WORKS,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.

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129 and 131 Beale street, between Mission and Howard San Francisco.

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DR. ABORN'S

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The most modern and scientific treatment of the diseases of the EYE, EAR, HEAD, THROAT and LUNGS.

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—OF—

Illuminating, Lubricating,

—AND—

PAINT OILS,

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!

An elegant and complete assortment.

SOLE IMPORTERS OF

Devoe's Illuminating Oil

PATENT CANS.

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The Perfection of Prepared Cocoa.

MARAVILLA COCOA.

Sole Proprietors—TAYLOR BROTHERS, London.

The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoas, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.

"A SUCCESS UNPRECEDENTED."

[See following extract from the Globe of May 14, 1868.]

"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."

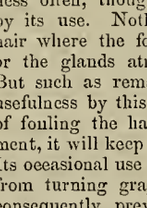
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.

8v19-6m

Ayer's

Hair Vigor,

For restoring Gray Hair to its natural Vitality and Color.



A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a

HAIR DRESSING,

nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.

Prepared by Dr. J. C. Ayer & Co.,

PRACTICAL AND ANALYTICAL CHEMISTS,

LOWELL, MASS.

PRICE $1.00.

Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. Mellonald & Co., Sacramento, General Agents. 25v18eow4m

San Francisco Metal Market

PRICES FOR INVOICES.

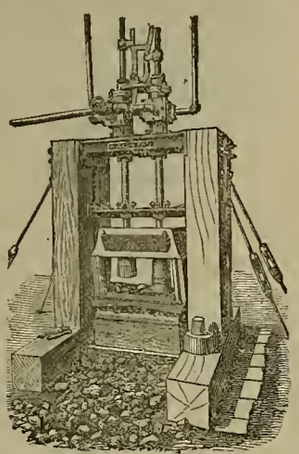
Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, December 5, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 6c ₱ 100 lbs; Bar, 1@1¼c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1¼@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2¾c ₱ lb.			
Scotch and English Pig iron ₱ ton	$29 00	@	30 00
White Pig ₱ ton	27 50	@	28 00
Refined Bar, bad assortment ₱ lb	— 03	@	— —
Refined Bar, good assortment, ₱ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04¼	@	— —
Plate, No. 5 to 9	— —	@	— 04¾
Sheet, No. 10 to 13	— 04½	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5¼
Sheet, No. 21 to 27	— 05	@	— 6¾
COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb			
Sheathing, ₱ lb	— —	@	— 26
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22
TIN PLATES.—Duty: 25 ₱ cent. ad valorem.			
Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— 40	@	— 4¾
STEEL.—English Cast Steel, ₱ lb	— —	@	— 15
QUICKSILVER.—₱ lb	— 55	@	— 60
LEAD.—Pig ₱ lb	— 7½	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
ZINC.—Sheets, ₱ lb	— 10½	@	— 11
BORAX.—California, ₱ lb	— 38	@	— 40

Machinery.

THE WILSON
Patent Steam Stamp Mill.



This extraordinary Mill, now so justly popular in the East, is now offered to the miners of the Pacific Coast. Having been in operation now for about eighteen months, the Company feel confident that the

WILSON STEAM STAMP MILL,

For Durability, Efficiency,

AND ECONOMY OF WORKING,

HAS NO EQUAL.

The Wilson Steam Stamp Mill is the only Steam Mill that has had the severe ordeal of practical working, and proved itself eminently successful. It is now in operation in several of the Eastern States and Territories, and gaining an envious popularity. The whole machine is so simple as to be readily understood by the most ordinary hands. In fact, its simplicity is its durability. The expense of crushing rock or cement with this Mill is less than one-half the expense of any other Stamp Mill, and less than one-half the cost. For further particulars inquire of

A. BICKNELL, Agent,
Nevada City, California,

Or of THE WILSON STEAM STAMP MILL CO., 326 Walnut street, Philadelphia, Pa.

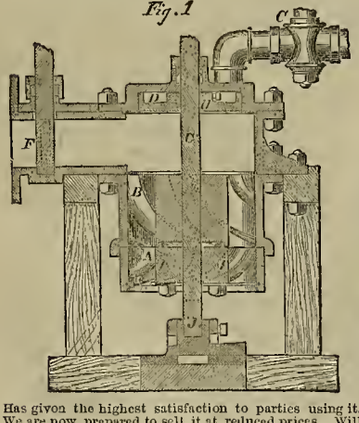
NOTICE.—All persons are hereby warned not to manufacture or use any Steam Stamp Mills that are an infringement on the Wilson Patents, as they will be prosecuted to the utmost rigor of the law.

F. R. WILSON,
Supt. W. P. S. S. M. Co., Philadelphia.

20v1 9-tf

Lind's Improved Water Wheel

Fig. 1



Has given the highest satisfaction to parties using it. We are now prepared to sell it at reduced prices. Will also contract for all kinds of Machinery—Flour, Saw and Quartz Mill. All our work guaranteed. We will send competent men to put up our Wheels and Machinery. We contract for or do it ourselves. Our extensive acquaintance with millwrights on this coast enables us to furnish millmen with the best of workmen at short notice. Drawings for contracts furnished gratis. Send for circular.

A. LIND, Millwright,
Pacific Iron Works, San Francisco.

Refer to John Sime and J. J. Haley. 19v19

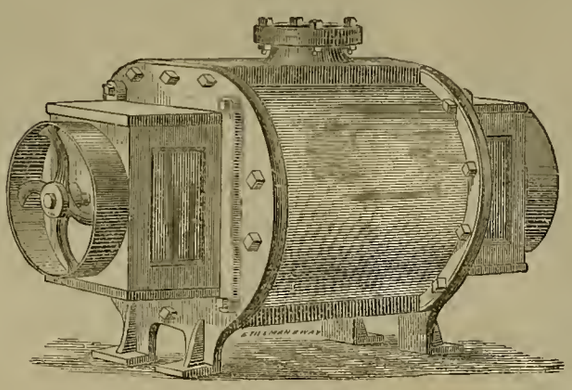
ROOT'S PATENT FORCE BLAST ROTARY BLOWER

MANUFACTURED BY KEEP & BARGION,

At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,

Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.



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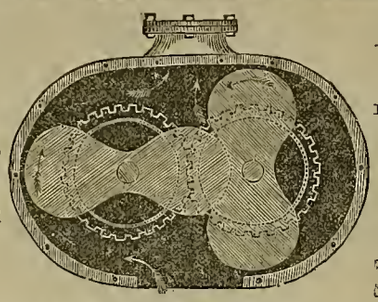

REQUIRES **Fifty Per Cent.** LESS POWER **Than any Blower** Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

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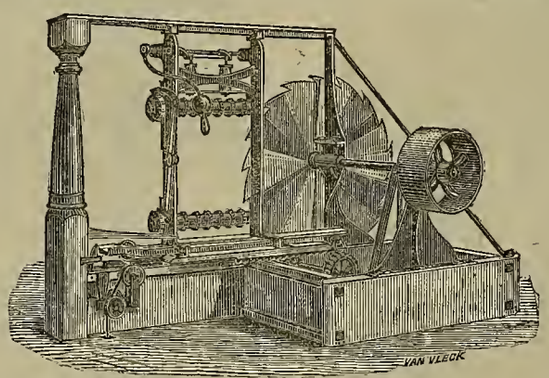
KEEP & BARGION,
Globe Iron Works, Stockton, Cal.

HUNTINGTON'S IMPROVED SHINGLE MACHINES.



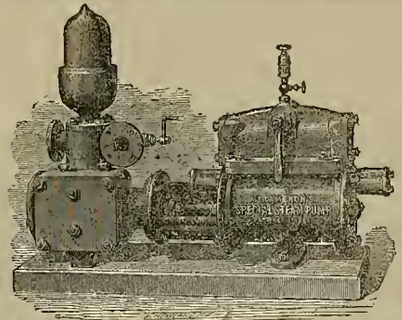
SHINGLE MAHINES CONSTANTLY ON HAND.

Steam Engines, Saw Mills, Lath and Picket Machinery, and Flax-Breaks

MADE TO ORDER.

F. A. HUNTINGTON, Manufacturer,
17 and 19 Fremont Street, San Francisco.

8v18-3m1am



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STEAM PUMPS.
PICKERING'S
Engine Regulators.
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INJECTORS.
MARINE
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CONDENSERS.

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Room to Let.

We have a large room, about 18 by 36 feet, in second story at 414 Clay street, near Sansome, which we will rent very low, suitable for printing or manufacturing purposes

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Publishers Mining and Scientific Press, 414 Clay st.

Blake's Patent.

THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's

Patent Steam PUMP

It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted POSITIVE under all circumstances. Send for a circular.

BERRY, & PLACE, 112 and 114 California st., San Francisco.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has everrequired repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

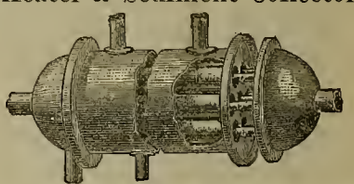
The pan being filled, the motion of the muller forces the pulp to the center, whereit is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setlers for themselves, at the office, 329 Fremont street,

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,
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For Miners, Millmen and Metallurgists.

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CONCENTRATION

Of all kinds of Ores, and the

CHLORINATION PROCESS,

For Gold-Bearing Sulphurets, Arsenurets, and Gold and Silver Ores generally.

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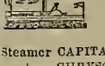
1v16tf SAN FRANCISCO, 1868.

California Steam Navigation COMPANY.



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" CHRYSOPOLIS.....CAPT. A. FOSTER.
" YOSEMITE.....
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Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE,
13v12 President

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

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TICKET PUNCH.—John Gardner, San Francisco.

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KNIFE SHARPENER.—W. H. Howland, San Francisco.

AERIAL STEAM CARRIAGE. — Frederick Marriott, San Francisco.

WINDMILL.—William I. Tustin, San Francisco.

BILLIARD TABLE CUSHION.—Matthew Delany, Virginia City, Nevada.

HORSE RAKE.—Olpha Bonney, Jr., San Francisco.

DEVICE FOR RELEASING STANDING RIGGING.—Frederick Wittram, San Francisco.

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LAYRES' ELEMENTS OF COMPOSITION.—This is a valuable book of 166 pages, containing plain and simple instructions in the art of composition. It should be read by all intelligent persons who desire to write or speak English correctly or eloquently. Printed and sold by Dewey & Co., Scientific Press Office, S. F., for $1, post paid.

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August 2, 1869. 6v19-1m

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Established for the Manufacture of
RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,
Embracing ALL SIZES of
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames
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Of every description and size.
☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention.
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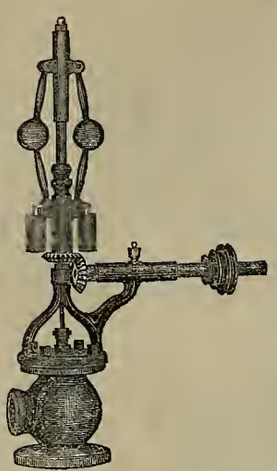
SAN FRANCISCO.



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PRACY'S IMPROVED
Patent Steam Engine Governor,
The Simplest and Most Sensitive Governor Built.

This Governor is made of the best material, the shafts being of cast steel and the bearings small, thereby avoiding the use of heavy balls and springs, running at a high velocity and maintaining a uniform speed. All sizes of these Governors are kept constantly on hand, and can be seen in operation at my works.

I also take pleasure in informing the public that during my recent visit to the East I became SOLE AGENT for
L. W. POND'S CELEBRATED TOOLS
ACKNOWLEDGED TO BE
THE BEST NOW MADE.

I shall keep constantly on hand all descriptions of
Lathes, Planers, Drills, Boring Mills, Milling Machines,
And every description of MACHINISTS' TOOLS, which I shall offer to the public at manufacturers' rates. Also
Morse's Twist Drills and Chucks of all kinds.
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ALL KINDS OF STEAM ENGINES AND MILL WORK GENERALLY.
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SOLE AGENT FOR TAFT'S PATENT SHEARS AND PUNCHES.
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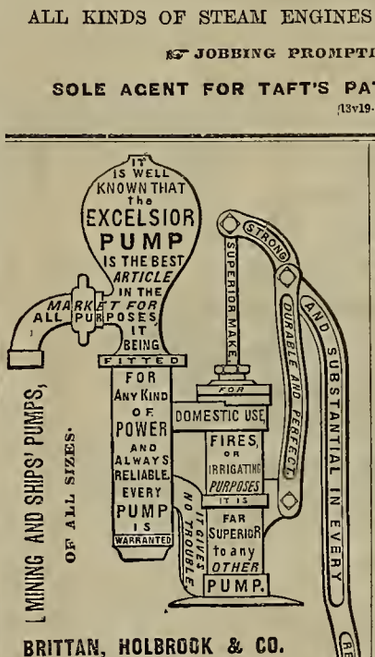
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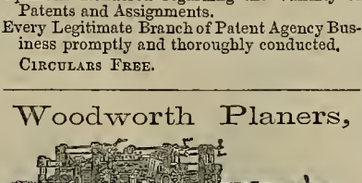

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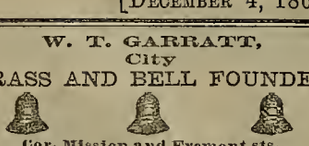

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Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass. CALLAGHER, WEED & CO.,

California Brass Works, 125 Front street, San Francisco. Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs. A. S. Hallidie & Co.—Gents.:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Addis, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

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MINING AND SCIENTIFIC PRESS.

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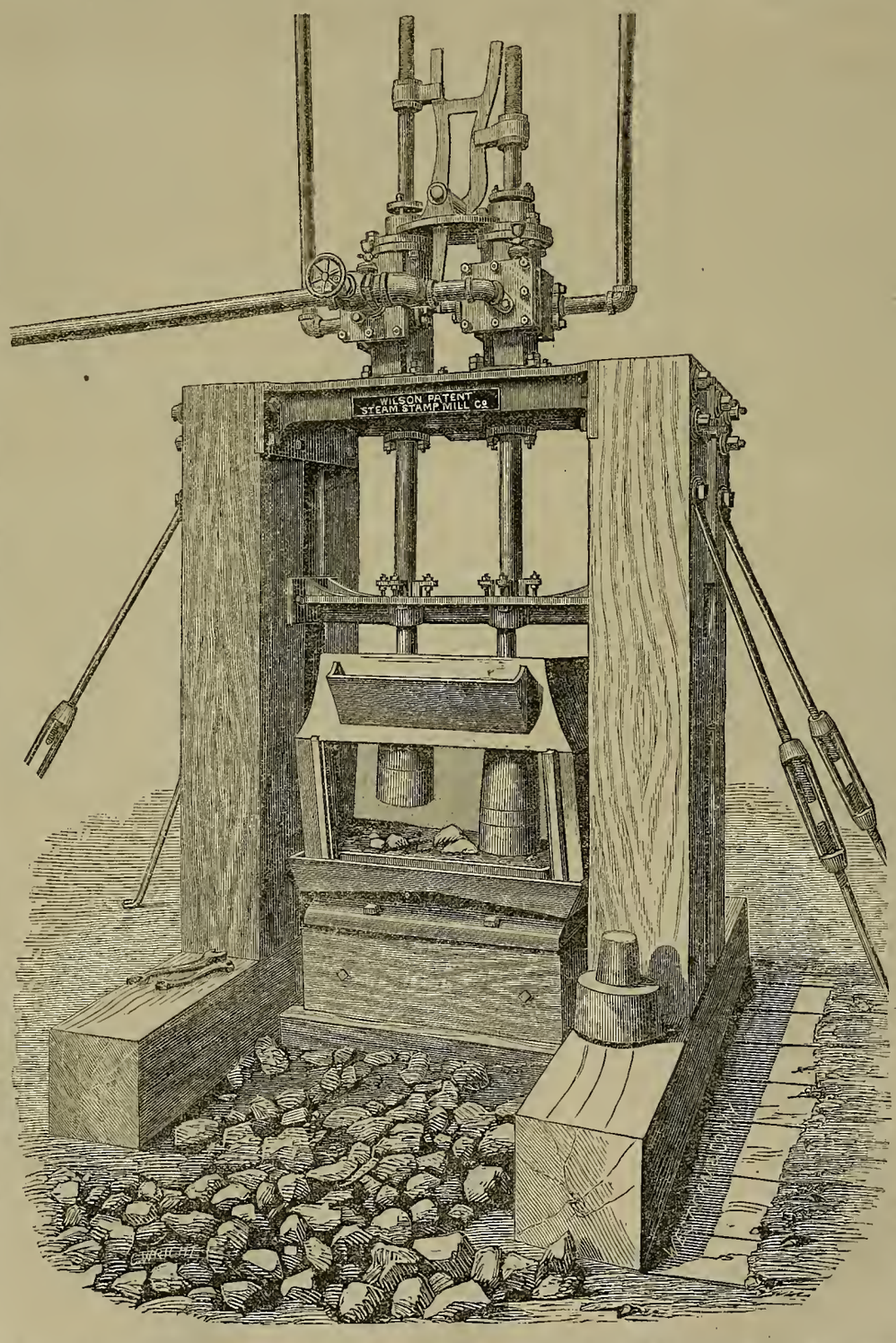
A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, DECEMBER 11, 1869. VOLUME XIX. Number 24.

The Wilson Patent Steam Stamp Mill.

We give herewith an illustration of the Wilson Patent Steam Stamp Mill, to which allusion has already been made in our columns. This mill is of that class where the steam is applied directly to the lifting of the stamps, without any intervening machinery. Although such mills involve a greater waste of steam in proportion to the work performed than is involved in the use of stamps driven in the usual manner, it is claimed that such loss is more than made up by the avoidance of the friction due to intervening machinery and the greater rapidity and force of the blows and the economy of space attainable. In the device here shown, the valve gear is very simple, and will be readily understood by a glance at the engraving. The bed upon which the stamps work is entirely disconnected with that of the frame which supports and guides the stamps, by which means the jar of the blows is measurably kept away from the machinery—a difficulty which has heretofore been a source of much trouble in operating mills of this description.



It is claimed by the inventor that these mills have been in operation in North Carolina and elsewhere a sufficient length of time to thoroughly test their efficiency and practicability. The company place the capacity of a two-stamp mill, like the one here represented, at one ton per hour of the hardest rock. When running on softer or decomposed rock they will greatly exceed this work. The weight of one of these stamps is 500 pounds, and it is thrown down at each blow with an added force of 1,500 lbs. The greater efficiency of a quick and rapid blow over a slow one is well known to every millman who has had any experience in breaking rock upon the "dump," where a light hammer and quick blow is always employed in preference to a heavy and slow one. For supplying the mill with steam, a boiler of 15-horse power is sufficient. The fuel required for 24 hours is about two cords of wood. The stamps are intended to run and strike about 500 blows per minute (200 blows to each stamp); but a greater speed will have no effect upon nor endanger the mill by undue wear or breakage of any of its parts; and, unlike all other mills, they are seldom out of order. When the mills leave the shop for shipment, they are all complete, including braces, extra shoes and dies, etc., and weigh about 5,500 pounds, and can be set up ready to run in about three days after the foundation is laid. These mills are working successfully in the following localities: Russell mine, Montgomery county, N. C.; Cold Spring mine, Buckingham county, Va.; Balbach Smelting Works, Newark, N. J.; Bennett mine, Col.; Custom mill, Central City, Col.; Iron mine, Eastport, Me.; Vigilance mine, Nevada county, Cal.; and orders are being filled for other localities, while some are in transit to other mines.

Address F. R. Wilson, Superintendent, San Francisco, Cal., or A. Bicknell. Agent, Nevada City, Cal, See advertisement in another column.

THE GAME OF SPECULATION.—It would appear from the following, which we clip from the *Mining Record*, published at Melbourne, Australia, that California is not the only place afflicted with unprincipled speculators: "But little can be accomplished by the press to check the gambling spirit which now and again, in some error of the moon, gets the better of a large section of the people; but that little is bound to be attempted by any independent newspaper. If there be one duty of the newspaper more than another, plain and unmistakably it is this. Of course, as the press is made up of human entities, it may happen that an unworthy fragment of it may be absolutely in the hands or under the control of people whose personal interests lay in the initiation and encouragement of the speculative fever, which all actuated by an unselfish desire to assist the advancement of the Colony must condemn. When this is the case, there is nothing to be done but for the press as a body, to be more careful and persistent in the utterance of a warning note at all befitting seasons."

ILLUSTRATION OF THE NEW CAPITOL.—We shall soon publish a fine pictorial view of the State Capitol building as it will appear when completed, with an account of its progress of construction. We also expect to be able to give the plan of all the stories, with a full and correct description of all the apartments. There are many interesting facts connected with this great work which can thus be illustrated with much satisfaction to the people of the State.

Communications.

Mining vs. Stock Jobbing.

[Written for the Mining and Scientific Press.]

Editors Press:—The observation of Prof. Rowlandson, recently quoted in the editorial columns of the Press, to the effect that "sometimes a mine is found to pay under the stock-jobbing system, but so seldom that it may be considered as merely a dangerous experiment," is no less pertinent than true.

The disastrous effect of stock-jobbing upon every corporate enterprise, and more especially mining, is an evil that certainly merits a greater share of attention than it has hitherto received from the press or the public. The immunity enjoyed by those engaged in this species of gambling seems to result from a self-arrogated respectability unbought of by lottery-policy and faro dealers, although it is clearly demonstrable that the evils, public and private, that result from the operations of the former, are much the greatest in degree.

Mining, as a business, necessarily involves a degree of uncertainty, unknown in the business of railway transportation, manufacturing, etc., that makes the manipulation of its shares at the stock board certainly an experiment dangerous to every well-grounded hope of success.

The proposition that the successful jobbing of the shares of a mining incorporation inevitably necessitates the mismanagement of the mine, may sound somewhat sensational to those unfamiliar with the subject, yet it is nevertheless a fact, susceptible of the clearest demonstration; and the most casual observer will find along the Comstock Lode, from Cedar Hill to American Flat, a line of costly monuments to its truth.

For the benefit of the uninitiated, let us briefly sketch the *modus operandi* usually resorted to by stock operators to give a fictitious value to the shares of a mining incorporation for the purposes of what is dignified with the name speculation. If it is necessary to hull the shares, at the highest of a ring, the mine is worked, for the time being, with the sole object of a large, continued or increased yield of bullion. Every available ton of ore is extracted in the shortest possible time, and worked in a hurried, slovenly and wasteful manner. All "dead work" essential to future economical or successful working is abandoned, and in mining parlance the "eyes of the mine are picked out." The highest attainable price being reached, those on the *inside* sell, while the non-speculative shareholders on the *outside* find themselves the proprietors of a mine that requires as great an outlay of capital, perhaps, to restore it to a condition for further working as it did to open and develop it in the first instance.

If it is necessary to bear the shares, then a large amount of needless "dead work" is done; shafts are sunk and levels are run; large bodies of rich ore may be exposed, still assessments crowd thickly upon one another, until at last the wearied shareholder, so unfortunate as to be outside the ring, either sells for a trifle himself, or is sold out under the hammer for arrears in unnecessary assessments. This latter process is identical with what is popularly known as "freezing out," and has a very frigid effect on shareholders of limited means.

By these means, mines that would otherwise be steadily dividend paying, are rendered totally worthless as a permanent investment. How we are quackingly told by the "lame ducks" that mining is a failure, in the face of the fact that Nevada, with a population not exceeding 75,000, will yield for the current year, at a reasonable estimate, bullion to the value of $18,000,000. It is certainly gratifying to know that the kind of gold and silver mining prosecuted so diligently at the stock board in San Francisco is partially a failure; and would it not be a measure of justice and prudence to make it wholly so by a little wholesome legislation, such as has been outlined and recommended for the purpose of check-mating the operations of the gold gamblers of Wall street in their efforts to disarrange money values and hamper commerce?

While the mining interest is subjected to the paralyzing influence of unscrupulous stock gambling; while a great moneyed monopoly broods like a nightmare over every industrial enterprise on the coast and maintains such rates of interest as preclude competition in any avenue of business or trade, and with a railway company that discriminates 75 per cent. against way traffic, is it not a matter of gratulation and surprise that our success in producing bullion has been as great as it has?

Once relieved, in a reasonable measure, of those influences that militate so strongly against success, especially stock jobbing and rates of railway transportation that are closely in competition with ox teams, it is no fancy figuring to say that the present bullion product of Nevada will be doubled in five years, and with railway connection for the southern portion of the State, quadrupled in ten.

Mining, however disastrous it may have been on the curbstones and at the stockboards in New York and San Francisco, in Nevada is a very gratifying success.

Icon.

Ellsworth, Nev., Nov. 15, 1869.

Mining in Placer County.

[Written for the Mining and Scientific Press.]

When at Auburn I went to see the Evening Star mine, located three miles from that place, and owned by Wm. Quick, J. B. Taylor and others. There is a shaft down sixty feet on the ledge, which they were timbering up at the time of my visit, so that I could not go into the mine. The Superintendent informed me that the ledge is from ten inches to two feet in thickness. It was discovered last spring by Mr. A. P. Lowery, who was engaged in setting sluice-boxes across it. On prospecting, he found that it was very rich, both in free gold and in sulphurets. They have taken out quite a lot of good-looking rock, a portion of which will be hauled to the Green Emigrant mill next week, a mile and a half distant, for reduction. The rock is rich from the top down.

There are numerous other ledges in this section; but they appear to be "pocket veins." Most of the placer mines in the vicinity of Auburn are worked out.

At the Green Emigrant mine I met Mr. J. F. Clouser, and J. F. Jordan, Esq., of Chicago, prospecting the mine with a view to its purchase. The trouble with this, as with other mines in the neighborhood, is the fact that, although they present large, well-defined veins at the surface, sometimes five to eight feet in thickness, they are liable to run out entirely at a depth of fifteen or twenty feet. Prospectors, however, are confident that there is a good ledge somewhere near, which they are still in hopes of finding. The Green Emigrant mill was put up in the fall of 1868. Notwithstanding the generally unfavorable character of the ledges here, they are often found to pay in spots as high as $20 to $40 to the ton.

While at Michigan Bluffs, Messrs. Erman & Co. informed me that they had derived much benefit from having the strips of wood, in the bottom of their sluice-boxes, lined with strips of iron. The placer miners in this section express the opinion that some of our inventors would do well to turn their attention to improvements in collecting placer gold. They think that quartz operations have absorbed more than their share of the attention of the inventive genius of the State. I throw out the hint for what it may be worth. M.

P. S.—In the notice last week of the Lewis' claim, the word "stocken" should have read "slacken."

The amount of copper produced in the whole world in 1866, the latest date of which we have accurate statistics, is given as 93,415 tons, or nearly double that produced in 1846.

There are at present some 550 young American students at German universities, and upward of 1,000 American youths and girls attending the higher schools and educational institutions.

The Late Nitro-Glycerine Explosion.

[Written for the Mining and Scientific Press.]

Editors Press:—The cause of the recent explosion of nitro-glycerine at the Giant Powder Works is generally regarded as shrouded in mystery. The same has been the case with similar accidents heretofore. If occurrences of this kind can not be accounted for from the facts hitherto established, respecting the conditions under which nitro-glycerine will explode, we must look for causes yet undiscovered, and in furtherance of this object I venture to submit the following hypothesis:

Nitro-glycerine is exploded by concussion, which involves compression. At the Giant Powder Works there was a "leaky tub," and part of the floor of the factory was "saturated" with the explosive compound. On occasions of former accidents with nitro-glycerine we have heard of leaky casks or cases. Wood absorbs liquids by capillary attraction, through the effect of which it swells, if there is no adequate opposing resistance to its expansion; if there is such a resistance, and consequently no room for expansion, compression must take place; and if the resistance is such as partly to yield, both expansion and compression must result, each according to the degree of resistance.

The force exerted by capillary attraction in wood is so great that in former times it was turned to use, in many instances, in which explosive agents are now employed to the same end. Thus, for the purpose of breaking blocks of stone in quarries, rows of holes were drilled in the rock, plugs of wood were driven into the holes, and water was poured upon them, which caused the wood to expand with such force as to detach blocks of stone of considerable size.

It is plain that the water absorbed by a plug of wood, under the conditions just mentioned, must itself be subjected to a pressure proportionate to the force manifested by the expansion of the wood. The same must be the case with any other liquid capable of wetting wood.

Supposing a wooden tub, provided with a tap-hole which is closed by a wooden plug, is filled with nitro-glycerine;—what must necessarily happen? The staves and bottom of the tub being cut approximately parallel to the fibre of the wood, can exercise but comparatively little capillary attraction; and as their expansion is also but slightly resisted, any nitro-glycerine absorbed by them cannot be subjected to great pressure. But with the plug in the tap-hole the case is different. The face which it presents to the nitro-glycerine being transverse to the fibre of the wood, it is in a condition to exercise capillary attraction with avidity; and as the resistance opposed to its expansion is considerable, the pressure upon the nitro-glycerine within its fibres must also be considerable. The question, then, arises: might that pressure not be sufficient to cause explosion?

Again, if nitro-glycerine is brought in contact with a portion of the end of a two or three-inch plank, and the tenacity of the wood which remains dry is such as to effectually resist its expansion, might there not also be exerted sufficient pressure to explode the penetrating liquid?

A simple way of trying whether or not there is anything in the suggestion here advanced, would be to bore a hole into a piece of iron, drive a plug of dry wood into it, pour nitro-glycerine upon the plug, and then see if, after the liquid has been sufficiently absorbed, an explosion will take place. A. F. W. Partz.

Oakland, Dec. 9, 1869.

"Card Postage."—A system of "card postage" in successful operation in Germany is about to be introduced in England. Cards of uniform size are provided at the post office, having in one corner a stamp. One side is for the communication, the other for the address. The cards are sold at one cent each. Every kind of business notes, for which privacy is not necessary, can be sent by these cards at one-half the expense of a letter and at a great saving of time.

Mining—Louis A. Garnett, Esq., and the Committee on Ways and Means.

[Written for the Mining and Scientific Press.]

Mr. Hopkins in his "Common Sense" refers to "a very able pamphlet lately addressed by Louis A. Garnett, Esq., to the Congressional Committee on Ways and Means, upon the decline in the production of the precious metals," which he quotes as follows:

"Says Mr. Garnett on page 8: 'All the discoveries of gold within the past twenty years, confirm our own experience, which is, that the maximum is reached within a few years following the discovery. Our own production did not fairly begin until 1849, yet we attained our maximum, $90,000,00, in 1852. From that sum it declined in ten years to 45,000,000.

In Australia, the discovery was made in 1851, the maximum of $61,000,000 reached in 1853, declining in ten years to $32,000,000, thus showing the same proportionate decline to our own.

No one will deny, it is presumed, that within the United States there are at least 100,000 men engaged in processes for extracting the precious metals. Now, to say nothing of the immense amount of capital invested in mining machinery, and other incidental expenses, such as the salaries of engineers, superintendents, agents, secreteries, etc., etc., but simply take the minimum day's wages of 100,000 men, and *which they could earn at any other pursuit*, to wit: $3 a day for 300 days, we have $90,000,000 as the cost of labor alone to produce $50,000,000. It would be entirely safe, therefore, to say that every dollar produced from the mines costs two dollars to produce it."

In regard to the number actually employed in the production of the precious metals, we believe there are no statistics. Mr. Garnett's estimate may be above or below the fact. We think that Mr. Garnett's estimate of time employed, viz.: 300 out of 365 days, erroneous, as we do that men now employed in the mines could, in any other pursuit, earn $3 a day, or $900 a year. Could they, we believe labor in the mines would soon become very scarce.

We venture to ask Mr. Garnett what he thinks would be the value of labor in any branch of industry in California six months after the mines ceased to produce gold, and what would be the value per front foot of any property upon Montgomery and California street.

Had Mr. Garnett pursued his researches into the statistics of Australia, subsequent to 1863, we think he would have paused before he included that country in his deductions. He would have discovered that the minimum of decline in the province of Victoria, to which his statistics refer, was reached in 1862, followed by a steady increase, which in 1868 showed a gain of upward of 50 per cent. over the product of 1862, with a fair prospect that the yield of 1869 will exceed that of 1868.

Mr. Hopkins submitted his views as to the resources of California to the people of the State for their approval or disapproval, and courted criticism;—while Mr. Garnett, who apparently entertains views similar to those of Mr. Hopkins, addressed himself to Congress, through their Committee on Ways and Means. C. M.

Torpedoes—Lieutenant Lupis, of the Austrian navy, has hit upon a way of making the torpedo go straight at the enemy's ship, and explode by striking it. He constructs his torpedo in the shape of a dolphin, fourteen feet long, and sixteen inches thick with vertical and horizontal fins of metal. Into the head of this infernal animal he stuffs sixty pounds of compressed gun-cotton, with a number of iron plugs, like the bolt of the pin-catridge, sticking out. The belly is filled with air compressed to thirty-five atmospheres, and this motive power works a screw which projects under water at the tail, giving a speed through the first four thousand feet in the water of not less than eight or nine miles an hour. The lieutenant launches his creation from a long tube, which enables him to give it a definite direction toward the ship, and if it merely impinges upon that mark, some one of the pins or bolts is sure to be driven into the charge. In that case, the vessel would disappear with all hands.

Mechanical Progress.

Drawing Steel Tubes.

In a recent lecture before the Society of Arts, Mr. John Anderson, C. E.,—a portion of whose lecture upon the flowing property of solid metals under pressure we have given in a previous issue,—describes the manner of drawing steel tubes of any length or size or shape. We quote:

"To accomplish this operation, a hole or slit, according to the section required, is first formed in a short thick mass of steel; two dies are employed, the one internally, which remains in use throughout the operation, the other externally, which has to be exchanged for a smaller one at every passage. Then enormous hydraulic pressure is brought to bear in pulling it through the vacant space between the internal and external dies, thus leaving a portion of the steel behind, which forms a reservoir of steel for the increased length, by future elongation with that which could not pass through at the rate of motion of the apparatus, but to follow suit as it has opportunity, and then, by annealing the mass of steel, and using smaller and smaller external dies in succession, the thick lump becomes gradually elongated into any length of any section.

With the object of carrying out such a manufacture, a company was recently formed in London, to produce steel tubular forms of any size or section. A variety of remarkable specimens was produced by them which made every engineer's mouth water, and although commercially it has not succeeded, simply because the arrangements of the world were not quite ripe for it, still that, judging by all past experience, does not affect the question any more than the receding wave affects the rising tide. The grand fact remains that it is a possibility, by sufficient pressure and patience, to cause solid steel to flow into any hollow form of section without breaking its continuity; it is a wonderful triumph of mind over matter which cannot be ignored, and which has yet to accomplish most important results in the future history of applied mechanics."

Another New Brake.—Wilkin & Clark's brake just introduced on the Midland Railway, is illustrated by the *Engineer*. We quote part of the description given:

"The principle of the brake differs from others in so far as the guard has to keep it from working till he requires the brake, when he slackens the operating chain, and the brake is then allowed to act of itself; and one important point of this self-acting arrangement is that so long as the train is coupled together, and the guard with it, he can keep it out of gear; but if by accident the train breaks away on an incline, it becomes self applied. This point was tested before the train was put on the passenger service. The driver was ordered to run down a gradient of one in ninety, and after attaining a speed of thirty miles per hour the train was parted from the engine as if by accident, and the train came to rest on the bank in 200 yards, or fifteen seconds of time. Another train stopped in 330 yards, or twenty-seven seconds. As a further test, the driver was ordered to get up full speed and keep on full steam; the brake was applied, and, without shutting off steam, the train was stopped in 1220 yards."

Increased Strength of Wire-Drawn Iron.—The strength of iron or steel is greatly increased by the wire-drawing process. "In the case of iron of an ultimate strength of twenty-five tons per inch, it is increased in strength fully ten tons, and some of the best iron, with a strength of twenty-eight tons, is raised to forty tons. The most remarkable change in this respect is in the case of steel music-wire. The mild steel out of which this is made has a strength, when in the natural state, of from thirty to forty tons, according to its steeliness, but when tempered mildly, by being made red-hot and then cooled in oil, and elongated into wire, its strength is increased fully three-fold. At the same time, if such steel or even iron wire is made red-hot, so as to allow the natural law to assert itself, all these high conditions vanish."—*Cantor Lectures.*

An Eight-Ton Steam Hammer.—The Landore Steel Works have erected a single acting steam hammer, the head of which weighs eight tons. The cylinder is thirty inches in diameter. The anvil-block, which is cast in one solid piece, weighs seventy-five tons.

Reversible Rolling Mill Engines.—*Engineering* of October 29th describes and illustrates some new engines just set in operation at the Landore Works, Swansea. They drive a large rail mill with rolls 24 inches in diameter, and 6¼ feet long. We quote: "To obtain a reverse movement it has hitherto been the custom to adopt clutches and gearing, which are generally of a very massive character, to resist the sudden strains so frequently thrown upon them by reversing the mill, whilst in such cases a ponderous fly wheel is a necessity. In engines like those at Landore, the engines themselves are made to reverse, and with them the rolls, the boiler being the reservoir for power; and it is no uncommon thing to obtain a reversal in every second of time, or sixty reversals per minute, the movements of the engine being perfectly easy the while. The fly wheel (and the gearing to a great extent) is dispensed with on this principle, thus rendering less massive foundation necessary, and occupying much less space than ordinary rolling mill engines. In the engines we illustrate the starting and reversing handles are conveniently arranged to enable the engine man to watch the operations in the mill and regulate the engines accordingly. The steam can be cut off either inside or outside of the engine shed; and the moving parts being all well balanced, the engines are under the perfect command of the man in attendance. With these engines and mill ten steel rails have been rolled down from square ingots in sixteen minutes, which is considerably quicker work than can be accomplished by any other arrangement of engine and mill."

Bursting Pressure of Boilers.—"In casting up the bursting pressure of boilers, it is necessary that some number representing the tenacity of plates one-inch thick be decided upon. Some engineers estimate it at 34,000 lbs., while others place it as low as 25,000. These figures suppose the iron to be of the best quality. By an inch of sectional area is understood a sufficient surface of boiler-plate of any thickness under one inch, to make a thickness of one inch. In other words, suppose a boiler to be constructed of ½-inch iron, and from its end we cut off a section or hoop one inch long, two such sections would be equivalent in quantity of iron to one hoop one inch thick. In testing the strength of iron, bars one inch square are used; in estimating pressure on boiler-plates, sufficient surfaces must be taken for each thickness to equal in quantity a bar of iron one-inch square. If we assume that single-riveted boilers will sustain a strain of 34,000 lbs. per square inch of section the strain on each superficial inch on a plate ⅝-inch thick would be ⅝ of 34,000.—*The Locomotive.*

Filing Rip Saws.—A correspondent of the *Scientific American* writes: "I always file my rip saws from point to handle. I claim that in so doing the teeth can be kept at a uniform length. I file all from one side, and square across, and I raise the handle of the file a trifle above the point. I have found that if I held the file horizontal I would get the edges of the teeth nearest to me a trifle lower than those on the opposite side, and the result would be the saw would run crooked. Then I file the teeth six or eight inches at the point at a much less angle than I do the rest of the saw, and give them about the same pitch that I do a crosscut saw; the object is to facilitate sawing through knots. All new saws (back saws excepted) will be found high in the middle, and I keep mine in that shape, say one-fourth inch swell in a 26-inch saw. It is almost impossible for any one to maintain a parallel stroke forward and back; the hand will naturally fall a little in pushing a saw forward, and rise in drawing it back, so a saw that is full in the center will counter-balance that rocking motion of the hand."

Varnishing.—The *Hub* says the varnish-room should be the "parlor" of the shop. Too often the room which is good for nothing else is the one selected. Some old fogies think the back-yard will do well enough. A model varnish-room is well lighted, well ventilated, evenly warmed, and perfectly free from dust. The walls should be smooth, and offer nothing upon which dust can lodge. The room should be perfectly empty; and two or three hours before it is used, it should be carefully swept and sprinkled. Some varnishers have a silk suit to put on before entering the room; thereby avoiding the dust which their ordinary clothes are sure to carry.

Scientific Progress.

Harmonics in Optics as Well as in Acoustics.

Professor H. Wurtz gives an interesting notice of some new speculations upon the nature of Light, which, if supported by future experiment, will open up a new world to the scientist. We have space for only a part of the notice, and that condensed. Premising that "he who does not speculate will never discover theories, and thus neglects his duty",—because Science is made up of theories, that is to say, of successful generalizations,—he goes on to speak of a memoir read before the French Academy on the 16th of August last, by M. de Boisbaudran. Earlier in the same month, M. Mascart,—who "had shown, in 1863, the six principal rays of sodium to be all double, with the two component bands in each case at the same distance from each other",—announced that he had now found that the magnesium group of three green bands coinciding with the solar ray *b* are *twice repeated* in the ultra-violet. He concludes: "It seems difficult to believe that this reproduction of like phenomena can be the effect of chance; is it not more natural to admit that these groups of similar rays are *harmonics*, dependent upon the molecular constitution of luminous gases?

"M. de Boisbaudran asserts that his own mind has been long occupied with the very problem involved in the results of Mascart; and that he has, now filed in the Secret Archives of the Academy, a sealed packet, in which he says: "The spectral rays of the metals of the alkalies and alkaline earths, classed according to their refrangibilities, are arranged, like their chemical properties, in the order of their atomic weights." He claims to have already developed the laws which rule these harmonic repetitions of luminous rays; since, upon mechanical principles, it is obvious that the heavier molecule should possess a greater wave-length than the lighter. Chemically identical luminous molecules must oscillate isochronously, because they are known to engender constant and uniform wave-lengths in the Ether. He proceeds to explain the origin of the distinct rays evolved by each elemental molecule, which we see in the spectroscopic field. The molecule executes a system of distinct vibrations, constituting a sort of complex cycle, at the end of which it always returns exactly to the same initial phase. It is the vibrations of the same order, repeated in a succession of these cycles, that are isochronous, and *produce a spectral ray.*

"The beauty of this generalization",—says Prof. Wurtz,—"cannot fail to strike the most matter-of-fact mind. We have, in this hypothesis of de Boisbaudran, this grand comparison between the Infinite and the Infinitesimal drawn still closer, for we have the molecules endowed with orbital motions simulating those of the celestial bodies, and subject therein to similar and immutable laws. The grandeur of the thought is overpowering."

Prof. W. asks in conclusion, "whether the developments of the spectroscope, especially in view of this new hypothesis of the relations of light, molecular motion and the ether, will not necessitate a complete revision, if not reconstruction, of our accepted theories of the *polarization* of light and heat?"

A New Pyrometer.—M. Lamy has presented to the French Academy an ingenious pyrometer, founded on the constancy of the temperatures accompanying the phenomena of dissociation. It consists of a porcelain tube, glazed on both sides, closed at one end, and connected at the other with any convenient manometer to measure the tension developed. In this tube is placed a certain quantity of Iceland spar or white marble in powder, and it is then filled with carbonic gas by raising it to a bright red heat. When allowed to cool, the carbonic gas is entirely re-absorbed by the lime, and the manometer indicates a complete vacuum in the tube. The apparatus is therefore a true barometer, the depression of the column, if mercury be used, taking place only at high temperatures, and thus measuring the tension. To make this instrument of practical value, it is necessary that the temperatures corresponding to the maximum tensions of carbonic gas should be determined and tabulated. Such tables M. Lamy is now occupied in preparing. This instrument may be introduced into a furnace, and gives all temperatures above 800° by a simple reading, like an ordinary thermometer. Its indications are more marked the greater the temperature; while those of an air pyrometer grow feeble under the same circumstances.

Uranium in Photography.—We give, for the benefit of photographers, the following from H. C. Bolton, in *Silliman's Journal:* "According to my experience, after the nitrate, the ammonio-citrate of uranium is the most sensitive salt. This double salt was prepared by neutralizing a given weight of citric acid with oxide of uranium and an equal portion of the acid with ammonia, mixing the solutions and evaporating. The golden yellow solution showing no tendency to crystallize, it was evaporated to dryness and gave a semi-vitreous mass somewhat resembling citrate of iron. The uranium in a solution of this salt is not precipitated by many reagents; an excess of ammonia is without effect, ferricyanid of potassium and sulphid of ammonium only darken the liquid, the presence of citric acid preventing their action as in the case of iron, manganese and aluminium. On boiling with caustic potash the solution is decomposed with precipitation of uranate of potash. The salt is insoluble in alcohol which throws it down from an aqueous solution. This ammonio-citrate is the only compound of uranium which I have observed to be sensitive to sunlight in the dry state."

Chemical Affinity the Parallel of Gravitation.—Dr. Van der Weyde answers the rejoinder of Prof. Walling in the *Chemical Repertory.* We have not space except for this extract: "Chemical affinity in regard to the atoms of matter is the same as gravitation in regard to the members of our planetary system; chemical decomposition, or destruction of cohesion, which increases the distance of the atoms or molecules, is in regard to them the same as is the lifting up of a weight, or in general the counteraction of gravitation, is in regard to our earth; and each requires force to accomplish it. In the case of the decomposition of a chemical compound, which is the overcoming of the affinity of its atoms, a force must be employed equivalent to the heat produced during the combustion; we all know how great is the heat produced by the combination of hydrogen and oxygen, and how strong the equivalent electric current has to be, to decompose the resulting water again into its original elements; in which then the force employed is stored up again. The same law is prevalent when destroying cohesion, or when raising a weight."

Superficial Tension of Liquids.—M. Plateau considers that the singular movements of particles of camphor upon the surface of water result from the fact that ths water is charged with camphor in the parts adjoining the floating mass, thus diminishing the tension, but in quantities which vary in the different azimuths. The particles of water the farthest off then pull in all directions, by virtue of their excess of tension. To prevent the tension of water diminished in contact with camphor, the author agitated water with fragments of this substance, and measured the tension of the liquid, and found that it lowered itself from a tension of 7.3 pure water to 4.5. He discards the theory of a reaction on the part of the liquid itself, by the simple remark that camphor, as has been noticed, does not make such a movement on oil, notwithstanding that it dissolves itself in it. This absence of movement is perfectly in accord with the theory he advances, since the tension of oil is but 3.5

Farming and Gardening.

Communications for this department are solicited from all parts of the Pacific States and Territories.

The Price of Wheat.

The times are hard. Money is scarce, mining is dull, and the price of wheat has fallen to a very low figure—but a trifle above the cost of production, in this land of dear labor and still dearer transportation. Yet butter is high, and so is beef and pork, and many other things produced upon the farm. Why cannot our farmers take the hint, and diversify their labors more? Farmers in California ought not to complain of hard times, so long as our people are getting their butter, cheese, eggs, etc., from Chicago. But we started in to note the price of wheat.

Various circumstances have conspired to bring about the present low price of this commodity; but the realization of large crops is not one of them. If it was, that circumstance itself would afford some consolation. The fact is, however, that the American crop east of the Rocky Mountains is not a good one; and more than that, millions of bushels have been more or less damaged in the field or stack—much of it so badly that it will have to be converted into pork, butter or beef, or somebody will have to eat very poor flour. Our California crop is something in excess; but that excess is but as a drop in the bucket. The European crop is barely an average one.

One of the chief causes of the late decline is due to the fact that holders, both here and at the East, were unwilling to sell when fair prices ruled; and now that hard times and panics are upon us, everybody is anxious to sell; and many *must*, at any price which offers. But the hard times have brought with them another trouble; their extended and depressing influence has greatly reduced the consumption of the necessaries of life—chief among which is flour. This fact is more or less patent everywhere, but especially so in Europe. The producers have had the upper hand for a few years, and now comes the turn of the consumers. The former have held on until they can hold no longer; and now their compulsory sales have broken down prices.

Will low prices continue? We think not, for any considerable length of time. Wheat in Liverpool probably touched the lowest figure two weeks ago, when it was quoted at 9s. 6d. It has since advanced 4d. It can scarcely fall back again, for the supply is not large, and there is no source from which it is likely to be increased. The present price is discouraging to growers, both here and in the Mississippi States. If it should have the effect of turning the attention of California farmers to producing at home the eggs, butter, cheese, etc., which we are now receiving from Chicago, this depreciation will not have been without its benefit.

It should also teach us another lesson. It costs no more to plow, seed and harrow for 50 bushels to the acre than 25. Hence, if we can pay expenses at present prices, with 25 bushels, would it not be well to so improve our culture, at a trifling extra cost, as to reap the larger crop? Examples of different results, due to different plowing, etc., are not wanting even in the wheat districts of California, any more than they are at the East. Why not, then, endeavor to counteract low prices, and possibly unfavorable seasons, by better culture?

Bleaching Bran.—It is said that a German chemist has discovered a method by which bran may be bleached entirely white, so that it may be cooked with the flour, so as to add to the nutritive power of bread without effecting its color.

Grain.—We see it stated that the warehouses at the new landings above Sacramento are full of grain. Farmers are still holding out for higher prices.

Cultivation of Fruit—Important Hints.

We last week alluded to the complaint that is being heard in some quarters, of a deterioration in the production and quantity of fruit, and suggested that such results were due, in a great measure, to a lack of attention to the preparation of the soil. Fields, covered with fruit trees, where the fruit is removed therefrom, rapidly deteriorate in their productive energies. In many cases even a large portion of the leaves are lost by being suffered to blow into the roadways or adjoining open fields, so that next to nothing is returned to the soil. No land can long stand such a steady drain. The elements thus taken from the soil must be returned in the form of dressing of some kind, or the trees will deteriorate.

It has been suggested by persons who have paid much attention to such matters that the bearing principle in many of the older varieties has been injured *by budding from young trees*. At all events, many of the old favorites in the Eastern and Middle States, especially, have certainly deteriorated, in that respect, within the last twenty or thirty years, even where the ground has not been neglected. The Early York and the Crawford are especially mentioned in this connection as varieties which were excellent bearers, but are so no longer. Many other old varieties, in New York and New Jersey, although standing in favored localities, and carefully cultivated, refuse to bear as full crops as formerly.

One trouble suggested has been the fact that sufficient care has not been taken in the selection of the trees and buds. In many localities, in the States named, it has latterly been the custom to preserve seeds for stocks, from trees of more Southern growth. Such practice is condemned. It is found that Southern trees, and stocks grown from Southern pits, will not stand the Northern winters as well as trees grown from Northern pits.

It has been noticed in many instances that trees twenty and thirty years old bear full crops, while the same varieties of younger trees, though full grown and equally well protected and cared for, are very poor bearers. The reverse should be looked for; and the fact, if it exists, affords very good evidence that there is a deterioration from some cause or other. It is often noticed that orchards do well every other year, and poorly on alternate years. In such cases, careful draining and good culture would probably remedy the evil.

These hints, though coming from a distant section of the country, are not without a value here. We have never yet seen a sufficient reason given for the apparent early decay of peach trees in this State. It is generally attributed to excessive bearing, which, it is suggested, should be checked by stripping the tree of a portion of its fruit while small. We incline to the belief that a more free introduction of barn-yard compost to the soil of our peach orchards would be a better remedy.

The advantages of careful or high culture are forcibly demonstrated in the experiment with cotton, alluded to in our last issue, also in the experiments in wheat culture, in another column of the present issue. A hardy tree is an important matter with the fruit grower; and as much pains should be taken in securing such advantage as in the selection of variety. Too little attention is paid in the mountains to "shortening," to make the tree stouter and less liable to break down with snow; by which many trees are annually destroyed or greatly injured. "Shortening" might also be of some advantage in the valleys as a protection against high winds; although it neither makes the tree hardier, or causes its fruit to ripen earlier, as many suppose.

Selecting Cattle.—A farmer in selecting cattle, should be sure to choose those who have a well-formed head, with a full mild eye.

The Value of Trees.

Now that the planting season has arrived, this subject is justly attracting attention. Several points have been commented on by the papers of late, in the hope of inducing farmers to pay more attention to sylviculture, but the subject is by no means exhausted. One of the best, as well as most interesting, books in the English language on this topic (and others) is "Man and Nature," by G. P. Marsh, Minister to Italy, from which we cull freely, and which we recommend to our readers. On the value of forests for lumber, etc., we need not speak. Trees are generally supposed to have some

Influence on the Temperature.

As conductors of heat they tend to equalize the temperature of the earth and the air by conveying warmth through their roots into the earth when the air is the warmer, and into the air through their leaves when the earth is the warmer. Trees maintain at all seasons a mean temperature, and hence the air in contact with forests is cooler in summer and warmer in winter than when not subjected to this influence. The amount of influence, however, exerted from these and similar causes, is not definitely known, although there is reason to think that it is greater than is commonly supposed. Forests shelter ground to the leeward from winds. It is thought in Italy that the clearing of the Apennines has changed greatly the climate of the valley of the Po, by exposing it to the sirocco, which was formerly kept off by the forests. The felling of the woods on the Atlantic side of Jutland, has exposed the land to the sharp sea-winds and to the drifting sands. It is asserted that the local retardation of spring in Italy, France and Switzerland, is to be traced to the same cause. Observations tend to prove that in tropical climates the temperature of cleared land is about two degrees Fah. above that of the forest.

It is well known that the great swamps of Virginia and of the Carolinas are healthy, even to the white man, so long as the forests remain, but become very unhealthy when the woods are felled. In Italy the effect of the trees in depriving air of the miasma, with which it may be charged, is very commonly admitted.

The forest tends to diminish the moisture of the air by preventing the sun's rays from reaching the ground and evaporating the water which falls on the surface, and by absorption of moisture through its leaves. On the other hand, it tends to increase the humidity of the air by drawing up water through its roots and exhaling it through the foliage. The spongy mantle of leaves it spreads on the earth acts in both directions. It sucks up moisture from the air on the one hand, while on the other it retains the water—not wholly protected from evaporation—which would otherwise sink into the earth or run off in superficial channels. The result of both seems to be that trees serve as equalizers of temperature and humidity.

Increase of Rain.

It can scarcely be doubted that forests promote the frequency of showers, and if they do not augment the amount of precipitation, they equalize its distribution through the different seasons. The terrible droughts which desolate the Cape Verd Islands, must be traced to the destruction of the forests; and many are the witnesses who testify that in Egypt rain has become more frequent since the vigorous cultivation of trees. In France, observations would show that the felling of trees has caused droughts, while in the same district the replanting of trees has resulted in increase of rains. It may be remarked here that, as the atmosphere does not necessarily return its humidity to the local source whence it derives it, it is often very difficult or impossible to trace this source. Hence also, for example, if it is shown that in a certain place once freed from forests no more rain than formerly has fallen since the woods have again existed, this does not prove that these woods do not augment the amount of precipitation elsewhere.

Influence on Springs, Torrents, Etc.

It is well established that the protection afforded by the forest against the escape of moisture from the soil, insures the permanency of springs, while its removal leads to the disappearance of them. Of the many examples of this, one must suffice here. The Wolf spring, in the Commune of Souhey, France, formerly "did not exist. Eighty years ago a grove of trees grew up and a fine spring appeared, which furnished an abundance of fine water in the longest droughts. A few years ago the grove was felled, and the spring disappeared."

It has already been remarked that the forest retains water, and by absorption into the vegetable mold prevents its running off in temporary channels. Thus in spring the sudden melting of the snows and the resulting rising of the rivers are greatly modified, and the forming of torrents, which sweep along with devastating force, prevented. The cutting down of trees has caused the loss of 61,000 acres of arable land, in ten years, in one department in France, by washing away or covering with rocks and stones some of the best farms. This destruction of land has led to a depopulation of provinces to a great extent. Moreover, in this way river channels are obstructed and harbors choked up. It may safely be assumed that annually 220,000,000 cubic yards of solid matter are abstracted from the Italian Alps and the Apennines by the force of running water. Moreover, the felling of forests lead to the falling of rocks and avalanches in such countries as Switzerland, and to mountain slides. A land-slip occurred in 1618, in the valley of the Maira, which covered the town of Plurs, and spared not a soul of the 2,430 inhabitants.

General Consequences of the Destruction of the Forest.

The soil no longer protected by the trees is alternately parched by the summer sun and seared by the rigors of winter, dried, pulverized and tossed about by the wind. The melted snow and the rains no longer absorbed by a loose, bibulous mold, rush over the surface instead of sinking into the ground and storing up moisture for the springs. The rivulets are dried up in summer, and swollen to torrents in spring and autumn. There is a continual degradation of the uplands, and a continual change in river channels and harbors. The earth once fruitful, stripped of its rich mold, becomes gradually altogether barren. This is no fancy picture, and almost every narration of travel in countries which were the earliest seats of civilization, bear witness to the truth of these general statements.

Bad Effect from Overloading Trees.

A British pomologist (Dr. Lindley) writes thus: "The bending of branches of trees by an over-crop of fruit is most injurious; for the pores of the woody stock are strained on one side of the bend and compressed on the other; hence the vessels through which the requisite nourishment flows being partially closed, the growth of the fruit is retarded in proportion to the straining and compression of the stalk. Does not this account for the diminished health and vigor of trees which have been allowed to over-bear?"

Home-made Tar.—Mr. N. J. Shephord, Lebanon, Ill., says: "Procure some good fat pine, and cut in small pieces; fill a large kettle that will hold at least 15 gallons. Turn the kettle bottom upwards on a large stone, place sods around it, leaving a small place for the tar to run out, and put a dish under to catch it. Then build a fire on top of the kettle to try out the tar, and if the wood is good you will have at least from four to six quarts."

Moss on Fruit Trees—A Remedy.

Many of our farmers are beginning to be seriously troubled with the growth of moss upon their fruit trees. It usually commences when the tree is about five years old, and increases in quantity from year to year, gradually eating away the life of the tree, and seriously injuring its productive capacity. This growth takes place during the summer season, and chiefly upon the windward or northwestly side. It is usually first seen upon the trunk, near the ground, and gradually ascends, enveloping in its progress all the main or older branches. Its early appearance is often mistaken for insects. It is more or less vigorous and rapid in its growth, according as the locality is subjected to greater or less moisture, from winds or fogs.

Mr. L. A. Gould, of Santa Clara, informs us that he has found an effectual preventive in the use of sulphate of coppor or "bluestone." Dissolve the bluestone as is done in preparing it for wheat, and wash the trunk and branches thoroughly, as soon as the moss begins to appear. A single application is good for three or four years. Mr. Gould first applied it to about a thousand trees four years ago, and the moss is just now beginning to make its reappearance. The solution works no injury to the tree, and besides its utility in killing and keeping away the moss, is also an advantage in destroying any insects, or their eggs or larvæ, which may exist on the bark at the time of its application.

Grape Pruning.

A correspondent of the San José *Mercury* furnishes the following views upon grape pruning: "From over twenty years of practical experience, divided between France, Maderia, Australia, seven years in California, and six years of the time cultivating the grape vine under glass in England, I am led to believe in fall pruning. The time for pruning has been the subject of much controversy. I believe the best time is after the vines have completed their season's growth; the worst time, the spring. fall pruning enables the wounds to heal, which is very beneficial. Spring pruning often leads to decay and ill health, sometimes death. Hoping this brief communication upon a subject fraught with so much importance to our farmers and vintners may be the means of eliciting further information, I remain, etc."

Upon which the editor of the *Mercury* remarks: "There can be no doubt but the fall is the best time to prune the grape. The work should be done as soon after the leaves fall as possible. When done in the spring, the vines, not having time to close the pores caused by amputation of the limbs, before active growth commences, bleed profusely, and thereby lose much of their strength. This evil is greatly obviated by pruning in the fall, or immediately after the wood has become thoroughly ripe and hard. In addition to this, the remaining buds are better developed and more completely matured, by having all branches not required for the future years' crop removed as early as possible after the vines have completed their season's growth."

THE PEANUT CROP at the East has been unusually large. It is estimated that over a million bushels have been raised, the past season, on the south side of James river, between Petersburg and Norfolk, worth an average of $2.75 (currency), or an aggregate of $2,750,000. This seems an immense sum for so trifling a thing within so circumscribed a region. The crop in this State is constantly increasing. It is stated that over 17 tons, or about 1,500 bushels, have been shipped the past season from the Oroville depot—mostly grown in that immediate vicinity by Chinese. Who eats all the peanuts?

A PEANUT picker is among the late labor-saving machines recently introduced into the Southern States. It requires 10 hours a day for two months to gather a crop of 1,000 baskets of peanuts, at a cost of about 15 cents per bushel. It is claimed that the "picker" works an important saving in this particular.

Timber on the Public Lands.

Mr. J. N. Smith, Government Land Agent, is now in Nevada county looking after the Government's interest in the public lands. The Nevada *Gazette* says this agent claims, by way of "stumpage," one-sixth of the value of all the timber taken from the public lands, and not used in fencing or for legitimate agricultural purposes. This claim is founded upon an old law, of 1833, which was made to meet the necessities of the "Great West" at that time, and was intended to protect legitimate agricultural settlers against the plunderers who then sought to steal the timber from Government lands for merely speculative purposes. It is only by a forced construction that the law can be made applicable to the "situation" on the Pacific Coast. Mining is the chief business among the timber lands of the Sierras; agriculture but incidental. The Government has recognized this fact in various ways, and especially by refusing, until lately, to place those lands in the market. The timber has been employed almost exclusively for the needs of mining. Had Government taxed the miner one-sixth of all the timber he used for fuel, for building purposes, for sluices, for use underground, etc., etc., upon the first discovery of gold, our mining regions would still have been a wilderness, California a Territory, and "Dixie" an independent nation. It is time there was a truce to this trumpiug up of old, dead-letter laws, and even of straining more recent laws so as to meet unexpected cases, as is often done by our Internal Revenue Collectors. There ought to be more liberality and common sense shown by the heads of departments, in the instructions given to their subordinates. Such things are but little better than the land swindles attempted by the land speculators, who go about in the State, seeking for technicalities on which to found claims, and relying on the weight of their purses to worry out the more impecunious and innocent land holders who have honestly paid the price of their lands. The *Gazette* is informed by the agent, Smith, that in other localities, parties who have refused or failed to pay the "stumpage" demanded, have been arrested and imprisoned until they settled in full. If such outrages have been perpetrated in other places, in the name of law, we trust with the *Gazette*, that immediate steps will be taken by the citizens of Nevada county to place the matter before Congress, which body will undoubtedly grant relief from any such precaution in future. This new-born zeal of the officers to enforce an obsolete law may have arisen from the dullness of business at the Land Office. Our Land Laws need overhauling and revision, so as to fit them to the present condition and wants of the people.

MILKING MACHINES.—The editor of the *American Agriculturist* says there has not yet been any mechanical contrivance invented for milking which can be used long and with safety to the cows. Some of the machines apparently work well for a while; but it is found that their continued use dries up the flow of milk, and is injurious to the teat. There is as yet nothing like the human hand, and a female hand at that, which is always managed with a combination of force, gentleness and patience, far superior to the hand of man. The act of milking by hand is greater than by some of the machines; but the saving made by the latter is more than counterhallanced by the drawbacks alluded to.

NEW AND OLD HAY.—It has been ascertained that well cured hay weighed in the field July 20th, and well stored in the barn until February 20th, had lost 27½ per cent. of its weight, It is, therefore, better to sell hay in the field at $15 a ton than from the barn at $20 in midwinter.

Interesting Experiments in Wheat Culture.

Mr. R. A. Gilpin, of Westown, Pa., has furnished the Pittsburg *Chronicle* with the result of an interesting experiment in wheat culture, which he made last season, the substance of which we append: The ground measured an acre, within a fraction, and was a portion of a field of uniform character. It was prepared for seeding, and manured the same as the balance of the field. The seed was *drilled* in upon the experimental ground at the rate of three pecks to the acre, on the 25th of September, 1868; in drilling, every other pipe of the drill was stopped, so that the rows of wheat were twenty inches apart, or about double the usual distance. The seed upon the balance of the field was drilled, with all the pipes open, and allowed to mature as usual, without any after cultivation. In the spring, when the ground had become sufficiently dry to work, a small garden hoe barrow was run between the rows of the experimental acre, working the ground to the depth of about three inches. This was done only once. The effect of this working was very apparent; the wheat took a rapid start and outgrew all the rest of the field. As the season advanced it grew tall and strong, and no amount of wind or rain had any effect to lay it down. When the heads formed, the greater length was apparent. It was backward in ripening, and the rest of the field was cut and hauled for a week before this was ready.

Now for the result. The experimental wheat yielded twenty-three bushels to the acre; the quality of each was about the same. Whether from defect in the seed, or the wet season, or the late planting, the whole of the wheat was injured by the rust and weevil, and this experimental part did not escape; it was affected just as the rest was. This experiment cannot be regarded as entirely satisfactory. The season was exceptional, the seed used was inferior, and the yield of the experimental part of the field was not absolutely great, but only by comparison with the rest of the crop, which was a poor one, from the effects of the rust and the weevil; but the result is, under any circumstances, sufficiently reasonable to attract the attention of farmers and induce a further trial.

THE RAINS.—Many of our oldest inhabitants have been predicting a dry winter; but the rains of the past week have pretty effectually dispelled all fears on that score. We have just about reached the ordinary period for the beginning of heavy rains, and the atmospheric appearances are now as favorable for a good season as the most enthusiastic could wish. A good soaking rain at this time would, however, be very acceptable, and would greatly benefit agricultural operations. The young crops would get thereby a friendly lift, and the land would everywhere be placed in the best possible condition for the plow. There is much planting and plowing to be done yet; probably not more than one-quarter, or at most one-third, of the wheat has yet been sown. Our own impression is, that there is no reason to be at all concerned about a sufficiency of rain for both agricultural and mining purposes.

SLABBERING HORSES.—A correspondent of the Chicago *Farmer* remarks upon the diverse theories, more or less plausible, in regard to horses slabbering as follows: Some say it is the seed of clover; some say it is some acid weed; some one thing and some another. Now, I have very good reason to believe that in fact it is none of these, but a little black, extremely acid insect, visible to the naked eye, which is some years bred by the million, and some years not. It will usually be found in the clover-heads, if at all, while it is in full bloom, or just after that time; and possibly it may sometimes breed in other grasses also. Hence a crop that has these insects in it will always slabber horses if they eat it. But if the same crop is cut before they have matured, or after they have gone out of it, it, of course, will not slabber them. The reason why this insect makes horses slabber can readily be known by any one who will once taste of them himself. I know this not so much from personal observation, as from old farmers who have often shook these insects out of their clover-heads and tasted them themselves.

San Francisco Market Rates.

Wholesale Prices.

FRIDAY, December 10, 1869.

Flour, Extra, ₱ bbl	$5 00	@	$5 50
Do. Superfine	4 00	@	4 50
Corn Meal, ₱ 100 lbs	2 00	@	2 25
Wheat, ₱ 100 lbs	1 15	@	1 60
Oats, ₱ 100 lbs	1 15	@	1 50
Barley, ₱ 100 lbs	1 00	@	1 20
Beans, ₱ 100 lbs	2 50	@	3 50
Potatoes, ₱ 100 lbs	75	@	1 00
Hay, ₱ ton	8 00	@	15 00
Live Oak Wood, ₱ cord	9 00	@	14 00
Beef, extra, dressed, ₱ lb	7	@	9
Sheep, on foot	2 50	@	3 00
Hogs, on foot, ₱ lb	5	@	5½
Hogs, dressed, ₱ lb	8	@	9

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@	16
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18½	@	19
Do. Rio	18½	@	19
Tea, Japan, ₱ lb	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Overland Butter	30	@	42½
Ranch Butter, ₱ lb	40	@	50
Isthmus Butter, ₱ lb	25	@	40
Cheese, California, ₱ lb	16	@	20
Eggs, ₱ dozen	45	@	50
Lard, ₱ lb	14	@	15
Ham and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	40	@	50
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	40	@	50
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	60	@	65
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	22	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	3	@	5
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	—	@	25
Soap, Pale and C. O.		@	12
Soap, Castile, ₱ lb		@	20

PROFITABLE VINEYARDS.—The *Alta*, in an article on vineyards, says that the profits of the best ones around this city are enticing. Mr. Shaw got $420 gross per acre from his Muscat of Alexandria vines annually, on the average, and $370 net. The Meister brothers get $735 per acre gross, and $675 net from the Alexandrian Muscat; $2,400 gross, or $2,300 net from the Flame Tokay; and over $450 per acre from the Black Hamburg, Black Malvoisie, Golden Chasseles, and White Tokay, for table use. The Mission grape, the most abundant and least valuable of all, has paid more than $100 net per acre for all the vineyards that produced crops suitable for the table, near San Francisco; Frontignan Muscat vines will yield at least $500 net per acre, for wine, at the present prices; and many of the Zinfidel, Reissling, Black Malvoisie and Rhenish Muscatella pay as much.

AMERICAN TREES IN EUROPE.—While our novelty-seekers are anxiously looking eastward for rare trees and plants, the horticulturists of Europe are asking for seeds of the most common trees in our forests. Mr. Heinrich Maurer, one of the veteran pomologists of Germany, has requested the publishers of the *Hearth and Home* to send him nuts of all the different species of hickory, oak, and other nut-bearing trees, which will be done as soon as possible. But as Mr. Maurer is far from being a young man, he certainly cannot expect to live to see trees from these nuts grow to any considerable size, and others besides himself must enjoy the fruition of his present labors. It is pleasant, however, to know that others may reap a harvest from the seeds we sow; and no doubt our German friend takes this view of the case and he will gather and plant so long as life lasts. We wish there were more like him.

WHEN DOES A COLT BECOME A HORSE?—This question is agitating the lovers of good horse flesh. Opinions differ. Some say—and among them Robert Bonner—that a colt becomes a horse only when he is past middle age. Others say he is a colt only up to his second year. Again it is asserted that a colt becomes a horse after the fifth year, when his teeth are fully grown. When "doctors disagree," who shall presume to say which is right?

PLOWS FOR CHICAGO.—Large numbers of plows have recently been received in California via. Pacific Railroad. It is stated that about 1,000 have been thus received the past season by Messrs. Hawley & Co. of this city.

ABOUT VINEGAR.—It was an observation made by Scheele, but the fact has recently been published as a new discovery, that ordinary brown vinegar will keep bright and clear, for any length of time if heated to the boiling point for a few minutes.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Leviathan.—*Chronicle*, Nov. 27th: This mine is just now attracting more attention than any other in this county. A large body of rich black ore is in sight in the main tunnel, 380 feet from its mouth, rich in native copper. This is only 200 feet from the surface, and a lower tunnel has been started to cnt it at a depth of 470 feet. The machinery for smelting works is being placed in position, hnt the storm has retarded operations somewhst.

Tarshish.—Work is progressing finely. The lower tunnel is being pushed ahesd with energy, snd to-night will see it in 140 feet—leaving ahout 660 feet farther to run to the ore. Good ore is heing taken ont of the npper drifts.

The Mountain.—To-day sees the Monntain Co. in good trim for the winter. The supplies are in and everything safe from the storms. The tunnel has been making good headway, and the prospects of the company have never been so flsttering.

Mt. Bullion Tunnel.—This is in 1,125 feet and is supposed to be in the casing of the Rosecrans ledge—the first of the series for which it is running.

Pennsylvania.—Work will be prosecuted all winter. The ore now being taken out to bo worked next summer, is very good.

Morning Star.—*Miner*, Nov. 27th: There is a report current on the street that this mine has been sold to parties who will smelt the ores in connection with those of the Leviathan. The price paid is said to be $40,000.

AMADOR COUNTY.

Kennedy.—*Ledger*, Dec. 4th: We learn that a definite arrangement has been made between the owners and the late employés of the Kennedy mine, and that work will at once be resumed.

INYO COUNTY.

Cerro Gordo.—The Virginia *Enterprise* has seen some very rich specimens of argentiferous galena from this district. The party bringing them reports good results from the furnace already huilt, and says that many new ones are projected. The furnacee are nearly all of the primitive Mexican pattern.

NEVADA COUNTY.

Dromedary Mine.—Grass Valley *Union*, Dec. 2: Sinking is progressing satisfactorily. This week will see the shaft down 80 feet, and then ore will be taken out for milling. In the shaft the rock looks well, showing free gold.

Bowery.—Same of 3d: We were at the old Gold Hill mill yesterday to look at some rock from this mine, which was being put through the batteries. Mr. Crase, the evening hefore, had cleaned off the plates and obtained 92½ ounces of amalgam. Yesterday they were again lined with it. There are 93 loads of rock, which will be finished to-day, and from all appearances the yield will he over $100 to the load. The Bowery is on Squirrel creek, and is owned by a company of practical miners.

McClellan.—The miners are down 160 feet, and have a ledge 20 inches in thickness, which bears snlphurets heavily, hesides showing free gold.

West Eureka.—A steam engine is to be put up at the shaft, which will be nsed for pumping and hoisting.

Good Shipment.—Same of 5th: The Eureka mine, yesterday morning, sent to San Francisco, gold to the amount of $28,500.

Crescent.—*National*, 2d: A crnshing recently made from the ledge, on Kate Hayes Hill, paid $19 per ton. In the 80-foot level the ledge is 12 inches in thickness. We understand it is the intention to erect one of Wilson's steam crushers.

Grass Valley Slide.—Same of 4th: Renben Thomas is drifting and tunneling, and has an immense lot of pay gravel out ready for washing. He has a great deal of top dirt to remove, hut the gravel amply compensates for the labor. As soon as it rains the hydranlic will be started. The next claims are those of John Miner & Co. They have sunk a shaft, from which they procured excellent gravel. Their tunnel is in 40 feet. Ground easy to work. Griffith & Stone's claims adjoin on the east. Trebilcock & Co., on the west side of Grass Valley Revine, are tunneling west to prospect their ground. Their cnt and tnnnel is in about 150 feet. They have struck gravel which prospects well. Abont 250 feet of slnices have heen put in the ravine. Tihhits & Co. have run in two tunnels, and the gravel has paid well. The upper tunnel is in 80 feet.

Sale of Mining Ground.—*Gazette*, Nov. 30th: Kidd, Hinds, Tully, and the South Yuha Canal Co., have purchased the hydraulic claims of Teeple and Creamer, at Omega, including the Temple ditch, for $20,000. We understand they have consolidated this property with the Omega ditch. Parties who are acqnainted with the claims believe the owners will take out dust enough the coming season to pay, clear of expense, the purchase mouey.

New Discovery.—*Transcript*, 2d: A first rate qnartz ledge has been struck near the Yuba river. A piece of quartz was brought into town, filled with sulphurets and free gold. The person stated that the ledge was hetween 18 inches and two feet thick, and had been traced to a considerable distance.

Rumored Sale.—Same of 3d: It was reported yesterday that the Eureka mine, Grass Valley, had been sold to an English Co. for $1,500,000.

Meadow Lake.—Truckee *Tribune*, Dec. 1st: Mr. James Doling, late of Meadow Lake, and the discoverer of a process hy which it is proposed to work the ores of that district, informed us a few days since, that the report that is going the rounds is incorrect. He says that he experiences no difficulty in reducing the ores hy his process, and that if he can obtain sufficient capital he will return to that locality in the spring and engage in the reduction of ores. He says the smallest he ever obtained from a ton of rock was $8, and the highest $36; the cost of working is $8 per ton.

PLUMAS COUNTY.

Wahponsee Creek.—Quincy *National*, Nov. 27: The newly-discovered diggings are attracting considerahle attention. The whole creek has heen located, and a number of the claims are paying largely, as high as an ounce a day to the hand. It is singular that this creek should have lain so long untouched in the midst of a mining community. It was thought that it could not be worked without great expense for want of drainage.

SHASTA COUNTY.

Gold Quartz.—*Courier*, Dec. 4th: We are informed that Charles Offschneider, of Whiskytown, last week found a piece of gold quartz in his claim which weighed almost 30 pounds, and is thought to contain as much as $400 or $500 in gold.

SISKIYOU COUNTY.

Started.—Yreka *Union*, Dec. 3d: The Ætna Co., Rough & Ready, got their first water on Tuesday, and hegan work in good earnest.

Good Prospect.—John Knapp struck a vein of good pay dirt in a drift he is cutting near Klamath engine house last week. It looks like the blue gravel ford near Timbuctoo and Smartsville.

TUOLUMNE COUNTY.

Confidence.—Sonora *Democrat*, Dec. 4th: The last clean up of the mill yielded $4,000.

YUBA COUNTY.

Rattlesnake.—*Appeal*, Dec. 1st: We understand that Geo. Bourne and others have rented the Rattlesnako mine at Brown's Valley, and will put the mill in operation to-day.

Rich.—Same of 2d: The Brush Creek qnartz mill, at the Mountain House, cleaned np $27,000 a few days ago, the result of seven weeks' crushing with ten stamps. The rock averages over $40 per ton.

Large Blast.—Nevada *Gazette*, Dec. 2d: The giant powder hlast was exploded in the cement hank of the Pactolns Co. at Sucker Flat on Tuesday. A numher from Nevada went down to witness it. Two charges, each containing 250 pounds of giant powder, were placed in the hank ahout 75 feet apart, and were connected by means of wires with a battery. The holes for the charges were hored into the hank 50 feet, and were some six or eight inches in diameter When everything was ready the operator gave a turn on the battery, and the explosion took place. The bank raised a trifle, and continued to oscillate for some secouds; but one of the charges, it is helieved, did not explode. The prohahility is that the caps and priming had heen damaged, as the ground is very wet. From what could he seen, it was thought the hlast was a snccess, though the effect cannot be known until the bank is washed down.

Arizona.

Wickenburg.—Prescott *Miner*, Nov. 25th: Recent news is to the effect that the cylinder head of the Vulture Co's engine was blown out, and that, in consequence, the mill was idle. A new hesd had been sent for. This is the first time this mill has stopped over a day for several years. The little mill was also idle.

Idle.—The Big Bug mill is again idle, owing to the illness of Mr. Heslep. Work on the lodes, roads, etc., is heiug pushed.

We have heard a rumor that Jas. Cusenbary has sold his interest in the Vulture mill and mine for a considerable snm.

Agua Frio District.—The ledges in Silver Mountain are the finest looking ledges we have seen in the country. They are the Mammoth, Monterey, Snow Ball and Huff. The Mammoth crops out high above the ground for over three miles, and averages 100 feet iu thickness! At Walnut Grove, we found Genung's arastra in motion, crushing the ores of the Sutler and Blue Jay lodes, which are very rich in free gold.

Rich Ores.—The Jackson prospecting party brought home with them some of the richest-looking silver ores we have ever seen; and Cal. Jackson showed us a piece of rock from a big ledge that crosses Salt river, which was full of free gold. The silver ores hsve been sent to San Francisco for assay.

Colorado.

The Tornado.—Georgetown *Miner*, Nov. 25th: In the terrihle tempest of Nov. 18th, the Georgetown Gold Mining Co's large mill huilding, the hest frame building in the county, was swept away. Huge beams and hraces, well bolted with heavy iron holts, were twisted and broken up as if they were only pipe stems. Of the many thousands feet of lumber that covered the side and end of the huilding, not one hundred feet can be found.

Items.—We are informed that a large bonanza of rich ore has heen struck in the Sterling mine....Another large mass of silver will be shipped to-morrow from the reductiou works of the Brown Co....The Burleigh drills in the Baltimore tunnel are doing good work....George Barrett has inaugurated active operations on the Helmick tunnel. It is heing nicely timhered through the slide, and is heing driven night and day....Huepeden & Co. are ruuning their new cylinder only. The partition in the old one gave out, and they are repairing it. They are in hopes to have it running soou after the first of Decemher.

Idaho District.—A new discovery, called the "Terrific," has heen made in Virginia Cañon, by S. C. Bennett and others. The shaft is twenty feet deep, and the crevice four feet wide. The walls are well defined, and the deposit large.

Reduction Works.—The Trenton Gold and Silver Mining Co. will erect large reductiou works next spring near the Snowdrift lode. Their water power on the north fork of South Clear Creek is ample for heavy machinery.

Wilson & Cass.—The first installment of dressed ore, 30 tons, treated at the dressing works of the company, will he shipped east on Saturday.

Terrible.—A large quantity of rich first-class ore is being raised, daily, from the mine. R. C. Old, Agent of the British and Colorado Mining Burean, has made arrangements with Crow & Clark for the shipment of ore to Swansea, for treatment.

Coley Extension.—There is a shaft of considerable depth on the lode. A quantity of selected ore treated at the Georgetown Smelting Works gave a yield of $384 in silver and 33 per cent. lead per ton.

Comstock Lode.—This lode is owned by the Boston Silver Mining Association. The tunnel is in 150 feet, and strikes the vein 130 feet from the surface. There are some 900 feet of drifts, tunnels and shafts. There is a gradual and constant increase in the width of the mineral deposit from two inches to eight feet. The reduction works are on Bear Creek, in close proximity to the mine, and have an abundance of timher. There are over 500 tons of choice ore mined out, and most of it hauled to the works, and 1,000 cords of wood cut and corded up ready for use.

Montana.

Sterling.—Virginia *Times*, Nov. 29th: From Mr. Percy, of Hot Springs, we learn that the richest lode in that vicinity was discovered last week on Canadian Gulch. It is named the Ida, and a force is now at work. The ore will be worked iu the Cope mill. Professor Jackson will put a full force on the Boaz lode, which has run, from several crushings, over $100 per ton.

Connor Mill.—We learn that from 15 tons of ore from the Lowain lode, Brown's Gulch, the Connor mill has cleaned up 26 pounds of amalgam, which will retort about two-thirds of that weight. The bullion will he worth about $4 to $5 per ounce, which will make the yield something over $100 per ton. There is sufficient developed quartz in the district to employ 20 mills, instead of 3, and still the miners are going down on their veins.

Summit.—The How mill at Summit is now in operation on ore from the Nelson lode.

Diamond City.—Helena *Gazette*, Nov. 25th: Times are looking up a little. Some of the claims are paying better than during the summer.

Enterprise.—Col. Keeler and others, of Helens, have undertaken the construction of a drain ditch from Ten Mile, to strike a cross chanuel helieved to exist between Last Chsnce and Ten Mile. The drain has reached a depth of 40 feet, and is 2,000 feet in length.

Another Mill.—*New North-West*, 26th: Mr. James W. Whitlatch—the qusrtz tamer of Montana—having organized a company in New York, has hegun the erection of a 15-stamp mill, near the IXL, Unionville district, near Helena. It will crush Park ore. The mill will be completed, hy contract, in 70 days.

Another Ditch.—Another company has been organized, another route surveyed, and another ditch is being dug. The owners are Pemherton, Frederickson, Newell, Brett, Reeder and some ten others, miners on Dry Gulch and Prairie Bar. It will carry water from Race Track creek to Prairie, Antelope, Spring and Modesty gulches.

Philipsburg.—Cor. of same: It is now positively asserted that the mill will start up as early as the 20th of Dec. It is understood to have been leased for one year upon a contract to ruu on 50 feet of No. 3, east, owned hy Merrell & Ullery. The proprietors, Purvine & Co., estimate enough rock in sight to furnish 18 tons per diem. The first run of a month will he made on rock from the Mountain Queeu, taken out this season, by which time it is thought from 1,000 to 1,800 tons will he ready in advance of the mill from No. 3, Comanche extension.

Idaho.

Loon Creek.—*World*, Dec. 2d: Mr. Tassell, express messenger, arrived from Oro Grande on Tuesday. He informs us that one company, working five hands—three stripping and two shoveling in the slnices—cleaned up over $300 in five hours. R. H. Johns and F. Phillips, while prospecting the same ground, took out over $7 in one pan of dirt, one piece weighing over $4. Mr. Tassell came a portion of the way on snow-shoes, and returned this morning.

Nevada.

COPE DISTRICT.

Sale of Mining Ground.—Elko *Independent*, Dec. 1st: We learn that a salc of 827 feet in the Mountain City mine has heeu made to Mr. Davis, of San Francisco, and Mr. Meador, of Santa Cruz, at the rate of $25 per foot, amounting to $20,675, cash down.

Cope Ore.—One hundred sacks of ore from the Borealis miue, and 60 from the Crescent, were received hy Openheimer & Co., in this city, yesterday, for shipment to San Francisco.

The Prospects.—Cope district, to-day, stands where White Pine did one year ago, and will, 12 mouths hence, occupy as prominent a position as does White Pine at present. Scarcely a day passes but we hear of some new mining strike within the houndaries of Elko county.

Placers.—The *Enterprise* says the surface diggings in Cope are likely to be largely worked next year. The extent of ground is great, and the specimens of scale gold brought in are very fine.

Bull Run.—On Monday we had a call from W. L. Grover, one of the pioneers of Bull Run district. Up to the present time there have heen some 200 locations made. The ledges are all regular, and come to the surface with distinctness, From most of them ore has heen taken and tested hy pan process, giving satisfactory results. A quantity of ore from the Porter, lately worked hy the English mill at Reno, returned $255 per ton.

ESMERALDA.

Pine Grove.—*Enterprise*, 4th: Mr. Wheeler informs us that all the mines are looking well, and the miners well satisfied to stay where they are. The principal leads are improving. The ore is rich and pays evenly.

HUMBOLDT.

Dun Glen.—Cor. of *Register*, 4th: The Tallulah Co. has decided to run a lower tunnel for development of their ledges. The new tunnel will he 250 feet perpendicular helow the upper one, and will not only give them a vast quautity of rich ore, hut also drain the mine. Sufficient ore has beeu worked to warrant further outlay.

The Alaska Co. is still sinking and taking ont ore sufficient to pay expenses.

They are down 40 feet and the ore is rich.

The Diamond mine, owned by Pollard & Co., is improving. Their shaft is sunk 45 feet, and the ledge is increasing in width. ....The Gem is produciog rich ore, which the proprietors are hanling to the Essex mill for reduction.....The work on the Chihuahua is progressiog. A layer of chloride ore of six inches in width is following the wall. The country rock is very hard, and tho work goes slow. The ore taken out pays handsomely....The Yosemite mino owners have been shipping another lot to Sau Francisco. The ore from former shipmeuts assayed from $300 to $1,200 per ton.

MINERAL HILL.

MINERAL HILL.—Humboldt *Register*, 4th: Roports are eneouraging. The mines aro 40 miles south of Carlin, the nearest point on the railroad. The deposits are extonsivo, and the ore of the richest is yielding by mill process from $200 to $1,000 per ton. Wood is plenty. A contract for building a mill on one of the principal mines has been let to responsible parties, who have agreed to have it iu running ordor in 90 days.

REESE RIVER.

SUPERB ORE.—*Reveille*, Dec. 2d: The Troy mine, Lander Hill, is produeing fiue ore in unusual quaotity. In a lot seut to the Manhattan mill for reduction this morning, there was a lump that weighed 900 pounds; the largest mass of ore, we believe, ever taken from any mine in this district. Same of 3d says: We have since learned that the value of the mass was estimated at $400—the estimate being based upou the ascertained value of similar ore.

EUREKA.—Col. Robbius' smelting furnace was pouring out metal, at last aceounts. Our informant says the town site was purchased by Col. Buel and I. C. Bateman, who are selling lots at handsome figures. He adds: Before the winter snows have melted, this district will possess as large a population as Austin, and a score of smelting furnaces.

The hoisting works of the Harvard Co., at Yankee Blade, are to be removed to Eureka, where the engine is to be used for the smelting works of Buel & Co.

WASHOE.

HALE & NORCROSS.—Gold Hill *News*, 4th: The body of ore still cootinues to increase in size. A large amouut of high grade ore is developed, a sample which we saw this morning being a solid mass of black sulphurets and green chloride.

OPHIR.—The water is some 400 feet deep in the new shaft. The pump and bailing tanks reduce it in the old shaft at the rate of 5 feet per day.

GOULD & CURRY.—Owing to the breakage of the crank shaft of the pump engine, last Snnday, work was suspeuded in the 7th level. The bailing tanks, however, keep the water reduced. The old upper workings show an improved yield.

YELLOW JACKET.—The daily yield of low grade ore from the old north shaft is 165 tons, which is all shipped to Carson City, on the railroad. From the south shaft the daily yield has been 225 tons until the last two or three days, there beiug a cessation for repsirs.

NORTH OCCIDENTAL.—The old St. George claim is being incorporated under this name.

OCCIDENTAL.—The north body still holds out its yield of superior ore. The face of the lower tunnel is in good ledge matter.

CHOLLAR-POTOSI. — The new hoisting works were started up a few days since, and prospecting at the 1,400-foot levcl will be resumed.

TWIN.—There is said to he ore enough in sight to yield $8,000 per month for the next four months.

BELCHER.—The body of ore at the 152-foot level still holds out well; average assays $34 per ton.

CALEDONIA.—The main Comstock ledge was cut on Wednesday, in the drift west, at the 100-foot level, 55 feet from the shaft; and they are now taking out pay ore for milliog. It will yield about $20 per ton.

CROWN POINT.—The east drift at the lowest level is 510 feet in length from the shaft, and the face is still in vein matter showing no ore.

SIERRA NEVADA.—New engine in position, other mill machinery being fixed, and all will be ready in two weeks.

SAVAGE. — No increase over the usual yield, and no improvement noticeable.

OVERMAN.—Daily yield, 145 tons, milling $20 per ton. Plenty of ore in sight.

KENTUCK.—Going ahead satisfactorily.

IMPERIAL-EMPIRE. — Both sinking and driftiug progressing satisfactorily.

MILL PURCHASED.—The Devil's Gate Mill, in Gold Cañon, has been purchased by Fair & Mackay, and will be run on ore from the Hale & Norcross. Its capacity is 25 tons per day.

ITEMS.—*Enterprise*, 3d: Wiegand & Co. yesterday received from the Birdsall Mill, Dayton, 1,065 pounds of crude bullion for assay, the result of their last clean-up.... A party of men went out yesterday to relocate some of the mines in Castlo District. Good prospects were ohtained there in 1861-2.

SUTRO TUNNEL.—Same of 5th: Last evening the Tunnel was in 254 feet. They made 39 feet last week. The ground was hard during the early part of the week, hut is now more favorable.

WHITE PINE.

WEEKLY MINING REVIEW.—*Empire*, Dec. 5th: The past week has been the most prosperous in the history of miniog in White Pino. The weather has been unusually favorable, and mine owners, as a rule, havo been extremely active. The mills have all heen kept busy, and the bullion product is largely in excess of any previous week's work since the first pick was struck. The increase is chiefly due to the South Aurora and Original Hidden Treasure mines. Most of the other productivo mines have also yielded an increased amount of ore. Taking all in all, the situation is most gratifying.

BULLION.—*Empire*: Our shipments for the week aggregate $119,078.95 against $51,493.13 last week. In addition to this, Wells, Fargo & Co. have on hand $20,000 in hars which they were unable to send forward yesterday. From seven to ten hars, worth, say $12,000, await shipment from the Stanford mill. Add the hase metal product, valued at $14,000, and we have a total yield for the week of $164,073.94. The largest shipment hitherto made from the district in a single week occured in July, and amounted to $76,538.17.

The *News* of 4th says: Our bullion shipment for the week amount to $101.080, and increase over the shipment of last week of $72,095, and the superintendent of the Stanford mill believes he will be able to send away $100,000 from his thirty stamps alone during the month of Deeember.

OUTSIDE DISTRICTS.—*News*, 4th: Eureka, on the Diamond mountaius, 40 miles west, is bidding fair to rival Treasure Hill in its richuess aud extent of its silver deposits. Silver Park is increasing in favor as tests are made of its ores. Some ore from the Great Eastern, the extreme location of the mineral belt, has been worked in Tregloan's mill aud yielded $100 the ton. The Park will have one or two mills at the earliest practical moment; and Shoshone, Sacramento, Cooper and Kern districts are moving in the matter of ohtaining mills.

ITEMS.—*Newe:* Aurora Consolidated sends to mill 80 to 90 tons daily. The Earl mine of this Co. is now the chief attraction of the district. On the 85-feet level the north breast, 40 feet wide and 20 high, has been pushed through solid ore a distance of 80 feet, and still no country rock is met with anywhere....Aurora South will ship $100,000 this month.... Consolidated Chloride Flat sent to mill 1,400 tons in November....El Dorado is sending to mill large quantities of good ore....Hidden Treasure proposes to increase stock....Pogonip & Othello bids fair to rival the Earl....Treasure Hill M. & M. Co. sends 10 tons of $100 ore to mill daily....Tom Paine has over 1,500 tons of $50 ore in sight.

ITEMS.—*Empire:* Original Hidden Treasure got $14,000 from 109 tons worked at Metriplolitan mill. Shipped $23,000 iu November....Eberhardt never looked hetter thau uow. Ore now being shipped mills $235 per ton on the average....Hartwell, on Bullion Hill, is turning out spleudid ore....Pocotillo looks better.... Mazeppa has good ore. Will work all winter....Domingo looks well....Rathburn smelting works have shipped 30 tons of hullion worth from $125 to $190 per ton, since they commenced work. The average yield of hullion is 1,000 pounds to the ton of ore....We saw Robertson smelting some Mt. Ophir ore yesterday. The first 10 pounds only went a little over one dollar a pound. The owner was disappointed. Deeper down in the sack it went $12 a pouud....H. M. Barnes brought in the first shipmeut of bullion from Silver Park yesterday: two small bars valued at $521. ....The mill at the Social and Steptoe mine, Egan Cañon was about starting up with 20 stamps. The ledge is4 ¼ feet wide.

MINERS aud others wishing ores crushed and sampled are referred to the card of H. W. Gray & Co., in advertising columus. The facilities there for testing, working and disposing of ores were never better.

San Francisco Mining Stock Market.

Whilo the reports from our mines during the past week have been more than usually favorablo, stocks have declined. The *Commercial Herald's* review, to Friday, Dec. 10, reports as follows:

The mining share market, duriug the past week, exhibited considerable animation, but, as a general thiog, the list of stocks usually called shows less firmness, and a gradual decline is noticonhle in a number of descriptions. Sales of Savage stock were quite large, and so of Original Hidden Treasure and Mammoth—all at a decline.

We uotice that the bullion shipment from the White Pine mines for the week ending December 4th amounted to $101,000, an increase of $72,000 over the shipments of the previous week. It is believed that the Stanford Mill, with its thirty stamps, will show a yield of $100,000 in bullion duriug the preseut month.

HALE & NORCROSS, under considerable sales, contioued to decline. On the sixth level, eross-cuts Nos. 2 and 3 have been connected in the vein, and they now have a continuous car-way io the ore-body from the shaft to eross-cut No. 3. The ore is reportcd to be excelleot at all the openings on this level. They are continuing the drift runniog north from cross-cut No. 3, the assays from the face of the drift showiog a continued improvement in the quality of the ore as they advance northward. For the week ending Decemher 4th, the upper mine yielded 287½ aud tho lower 854¼, making a total of 1,141 tons of ore, against 1,236¾ tons the previous week.

CHOLLAR-POTOSI has been less active than for some time past. During the week closing December 3d, they extracted 1,089 tons of ore; previous week, 1,165. No chaoge of importance in the mine. They are making preparations to work the ore remaining in the Blue Wiog and New Tunnel stops from the surface, the twenty-sixth floor being within ten feet of the top of the ground. The hulliou returns for the mouth of November aggregate $87,580, against $108,070 io Octoher, and $116,667 in September. A dividend of $1 per share is payable since the 10th inst.

KENTUCK has beeu in the market to about the usual exteot. The bullion receipts during the month of November amounted to $145,194. A divideod of $10 per share is payable since the 10th inst.

CROWN POINT maiotained its usual activity. On Decemher 4th the 1,000 level, east from the shaft, was in 369 feet, and the 1,100 level in the same direction 526 feet.

GOULD & CURRY has been in hetter request thau the previous week. During the week ending Dec. 6th, 389½ tons of ore were extracted, and during the same time they have discovered nothing of a favorable character in any section of the ore-producing portion of the mine. Most faces in the various stopes have a less promising appearance than existed a week ago. The bullion product for the month of Novemher amounted to $31,823.

SAVAGE sold to a large extent, at a decline. The returns for the month of November amounted to $31,200; in October they were $31,271.

DANEY levied an assessment of $1 per share on the 7th inst.

AMADOR (Cal.) sold at $296 per share. The bullion receipts for November were $58,083. A dividend of $8 per share is payable since the 7th inst.

EUREKA (Cal.) disbursed a dividend of $7.50 per share on the 7th.

NICKEL AND CHROME.—The presence of uickel and chrome-iron in the meteorites which enter our atmosphero, on their way from uowhere to nowhere, aud which are arrested, inflamed and brought to the ground, has always attracted special attention from mineralogists. Geologists ask why nickel and chrome should be so rarely fouud in a condition to mine from the rocks of the earth, seeing that they form a uotable proportiou of almost every meteorite. They only occur in our oldest formations. We may, therefore, expect that, for some chemical reason, their productiou has been dependent upon conditions which uo longer exist, at least in connection with the earth.—*U. S. Railroad Register.*

ANILINE DYES.—Aniline dyes have little affinity for cotton fabrics, while uniting readily with woolen. It has beeu found, however, that by first impregnating the vegetable fibre with an animal substance, such as a solution of the white of an egg, and drying it, these dyes will attach quite as readily as to wool.

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the MINING AND SCIENTIFIC PRESS and other Journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Bromide Tunnel, White Pine, Nov. 5, 20c...	Dec. 9	Dec 28
Bullion, Storey co., Nov. 22, $7.....	Payable Immediat ly	
Belcher, Storey co., Oct. 21, $2.50.....	Nov. 22	Dec. 11
Crown Point Storey co., Nov. 5, $7.50.....	Dec. 3	Dec. 24
Coney, Amador co., Oct. 14, $5	Nov. 20	Dec. 13
California S. M., White Pine, Oct. 19, $1.50.	Nov. 22	Dec. 13
Chicago and Detroit Cons, July 16 5c....	Dec 4	Dec. 27*
California, White Pine, Oct. 19, $1.50.....	Nov. 24	Dec. 14
Cherokee Flat, E. D., Butte co. Nov. 6, $5..	Dec. 10	Dec. 28
Cons. Virginia, Storey co., Nov. 3, $1.50.....	Dec. 3	Dec 31
Daney, Lyon co., Nev., Dec. 7, $1.....	Jan 9	Jan 27
Evening Star Cons., W. P., Oct 19, $1.....	Dec. 1	Dec. 20.
Empire M. & M., Storey co., Sept. 29, $25...	Nov. 5	Dec. 2
Flowery, Storey co., Nov. 12, $1	Dec 16	Jan. 7
Imperial Storey co., Nov 15, $10.....	Dec 20	Jan 14
Julia, Virginia Dist., Oct. 15, 50c.....	Nov. 18	Dec. 21.
La Reliance, Mexico, Nov. 7, $1.....	Dec. 4	Dec. 21*
Morning Star, Alpine co., $1.5).....	Nov. 15	Dec. 21
Manchester, Alpine co., July 16, 50c.....	Dec. 4	Dec 27*
Mammoth, White Pine, Oct. 23, 20c.....	Dec. 7	Dec. 28.
Mineral City, W. P., Nov. 3, $1.50.....	Dec. 6	Dec. 17
Mahogany & G. H., W. P., Nov. 8, 10c.....	Dec. 14	Jan. 4
Meadow Valley, Lincoln co., Dec. 4, 25c.....	Jan. 5	Jan 25
North Bloomfield, Nev. co., Nov. 6, $5....	Dec. 10	Dec. 28
Nonpareil, W. P., Nov. 13, 30	Dec. 20	Jan. 15
Ophir, Storey co., Oct 29, $2.....	D c. 2	Dec. 24
Pilot, W. P., Nov. 23, 10c.....	Jan. 3	Jan. 18*
Pocahontas, El Dorado co., Nov 12, $5 ...	Dec. 20	Jan. 12.*
Rising Star, Idaho, Nov. 5, 50c.....	Dec. 18	Jan. 15.
Rathbun White Pine, Oct. 26, 5c	Dec 1	Dec. 22.
Rocky Bar, Nov. co., Nov. 23, $300...	Dec. 27	Jan. 13
Silver Star, White Pine, Nov. 2, 15c.....	Dec 17	Jan 3.*
Segregated Belcher, Storey co., Oct. 22, $1..	Nov. 23	Dec 11.
Silver Vault, W. P., Nov. 22, 5c.....	Dec 23	Jan. 24
Sacramento and Meredith, Nov. 15, $1...	Dec. 22	Jan 10
Sierra, Douglas co., Nev., Dec. 3, $1.25.....	Jan. 6	Feb. 4
Tallulah, Nev., Nov. 22, $2	Dec. 31	Jan. 25
Taylor, El Dorado co., Nov. 16, 30c.....	Dec. 20	Jan 10.*
Yellow Jacket, Storey co., Nov. 25, $5.....	Dec. 28	Jan. 31

MEETINGS TO BE HELD.

Badger Hill & Cherokee Gravel.....	Meeting Dec. 21
Empire M. & M.....	Annual Meeting Dec. 16
Ophir.....	Annual Meeting Dec. 13
Original Hidden Treasure).....	Meeting, Dec. 11
Taylor M. & M. Co.....	Annual Meeting, Dec. 13*

LATEST DIVIDENDS—(Within Three Months).

Amador Co., div. $6 per share.....	Payable Nov. 8, 1869
Chollar-Potosi, div., $1.....	Payable Dec. 6, 1869
Eureka, div. $7 50.....	Payable Dec. 6, 1869
Golden Rule, Tuolumne co, div. 50c per sh...	Pay. Oct. 26, 1869
Ida Elmore, div. $1	Payable Nov. 10, 1869
Kentuck, div., $10 per share.....	Payable Dec. 6, 1869
Sierra Nev., Storey co., Nev., div. 50c.....	Pay. Oct. 10, 1869

*Advertised in this journal.

Latest Mining Stock Prices Bid and Asked.

AT THE S. F. STOCK AND EXCHANGE BOARD

FRIDAY, December 9, 1869.

WASHOE DISTRICT, NEV.	*Bid.*	*Asked.*
Alpha	19¼	20
Belcher	16½	17
Bullion, G. H.	—	—
Crown Point	18	18¾
Cole (Va.)	—	—
Confidence	15	—
Chollar-Potosi	21	21½
Daney	1	1¼
Eclipse	8	9
Empire M. & M. Co	60	59
Gould & Curry	78*	79
Gold Hill Quartz	20	25
Hale & Norcross	156	158
Imperial	39	40
Julia	⅛	60c
Justice and Independent	—	2
Kentuck	146	148
Lady Bryan	7	7¼
American	—	—
Occidental	14	—
Ophir	16¾	17
Overman	10¾	91
Segregated Belcher	8½	8¾
Savage	53	53⅝
Sierra Nevada	10	10½
Yellow Jacket	43	43½
MISCELLANEOUS DISTRICTS.		
Amador (California)	200	—
Aurora, White Pine	18	20
Eureka, (California)	253	260
Golden Chariot (Idaho)	15	—
Silver Cord (Idaho)	—	—
Golden Rule, California	—	—
Pocotillo, White Pine	—	—

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Dec. 9, 1869.

W. T. Atwood states the following as approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		*Per ton*
12 per cent. ore.....	$24 00	18 per cent. ore.....	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	35 20	30 " "	75 00
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

"LINEN" FROM THE BROOM PLANT.—A letter from Calabria, Italy, thus notes a manufacture which is new to us: "In Calabria, in some districts, especially in the Albanian ones, no linen is made except from the broom plant. Hemp we hardly cultivate, and flax is only used by people in easy circumstances. The following process is employed to render the broom fit for spinniug: In August, when the young plant has attained its full consisteucy, it is gathered point by point, and bound in bundles of a diameter of about five centimetres each; then boiled for several hours in a large caldron. When the fibrous part only remaius the bundles are removed from the caldrons, and carried to some stream or torrent, where they are allowed to macerate sufficiently, after which they are withdrawn from the water, and undergo the necessary preparations. The linen which is made from the broom is white, strong, and lasting."

GLYCERINE TO PRESERVE WINE.—Herr Kolb proposes to add from one to three per cent. of pnre glycerine to new wine to prevent the tendency to change.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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One square, one month..... 3 00
One column, one month..... 40 00
One column, one year..... 400 00
Legal notices and special advertising at favorable rates.

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Inserted at special rates, saving companies more than half the cost of daily publication. Blanks for notices, in legal form, furnished free, with all information desired of the law for collecting assessments.

San Francisco:
Saturday Morning, Dec. 11, 1869.

Notices to Correspondents.

Hydraulic Miner, Spanish Ranch.—To answer your question fully and exactly would occupy too large a portion of our paper. An approximate value for the amount of water which escapes is given by the formula $I=193.9\times a\times b\times\sqrt{h}$, where I=the amount in miners' inches, a=the height and b=the width of the aperture in feet, and h=the head ot water,—that is the height of the surface of the water above the center of the aperture in feet. Thus with the gate raised one inch, the aperture being 17 inches wide and the height of the water 22 ft. above the bottom of the aperture, we have $I=193.9\times 1\frac{1}{2}\times 1\frac{7}{2}\times\sqrt{22-\frac{1}{24}}=106$ inches nearly. With the same aperture, the amounts of water will vary in *about* the ratio of the square root of the heads (h). With different heights (a) of the aperture (b remaining constant) the amounts will vary in about the ratio of the products of the height (a) into the square root of the head (h).

Work at the Foundries.

The dullness of the times affects greatly the foundries, at which but little is going on at present, except in the line of job work, with which all seem to be about equally supplied. The Risdon Iron Works are engaged upon large hoisting-works for the Imperial mine at Virginia City, a set of four boilers for the Navy Yard, a number of propellers, gas-work castings, machinery for Mexican cotton mills, etc.

The Pacific Foundry is casting the house-front for Bancroft's new building on Market street, and doing considerable in the way of steamboat and similar jobs.

The Union Works are rebuilding a Corliss engine and overhanling the mill and pumping machinery for the Oneida mine, to work the body of rich ore recently struck; building a new engine and a set of twenty stamps for the Keystone, and pumps for the Amador. The position which they took with regard to the "Union" last June has proved, they say, entirely successful.

The Ætna is working on hoisting and pumping works, with water-wheels of the Tyler pattern, for the Havilah mine.

The Golden State is busy on castings, etc., for the Knoxville quicksilver mine; a ten-stamp mill to go to Railroad Flat, Calaveras county; four propellers, and miscellaneous work for the Los Angeles Water Co.

The Fulton Works are building a hoisting engine and works for the Pittsburg coal mine, two engines for the Paper Mill at Saratoga, and capstan, store-hoists, etc., of the Waterhouse & Nichols' pattern.

The other works are busy with a lot of miscellaneous jobs, too numerous to mention.

"Across the Continent" travel, by rail, is less than when the road was first opened; but the number "going West" appears to be much greater than that going East—whereby California is a material gainer in the way of population.

Colorado River Exploration.

Captain Samuel Adams, of the War Department, has been exploring the region of the Colorado river for the last five years, and the Washington *Chronicle* publishes his report. The Captain appears to have been much pleased with what he saw, and his account is very pleasant to read. He finds the valley of the Colorado, for 115 miles from its mouth, to be very fertile, and equal, if not superior, to the Sacramento Valley. Here is an abundance of certain kinds of wood, as the willow, ash, mesquite and cotton-wood; and wheat, barley, corn and melons are already raised by the Indians. Above Fort Yuma, for some 300 miles, numerous unconnected rich valleys are found. At the Mohave Valley, 350 miles from the mouth of the river, there is a very rich valley over thirty miles long.

The scenery of the Chimewava, Mohave, Black, Long, and Painted Cañons, is grand in the extreme. In the Painted Cañon, the different colored strata give a most peculiar effect. The Black or Big Cañon is thirteen miles long, with perpendicular sides 800 to 1,500 feet high.

In Central Arizona are numerous ruins of cities, fortifications, canals, mines etc. One of the most prominent is that of the Hall of the Montezumas, which stands several stories high. Such is the dryness of the atmosphere that the cedar posts of the doors and windows are in a perfect state of preservation, although very old. At Tubac is a more modern ruin. This city was inhabited but a few years since; but the Apaches had been there and laid everything waste.

For a distance of 160 miles along the Colorado river one sees constantly leads of gold, silver, copper and lead. At the head of Painted Cañon commences a white strata of rock, which extends for miles across the country, which is extremely light, and of the most superior quality for polishing silver ware. The Captain seems greatly impressed with the mineral resources, and believes that "there are nor icher gold and silver mines in the United States than those commencing at the western slope of the Rocky Mountains and extending throughout Arizona."

New Way of Cleaning Boiler Tubes. Our readers will recollect the novel plan adopted, during the late Mechanics' Institute Exhibition in this city, of cleaning the tall smoke stack surmounting the boiler furnace, at the Pavilion, by firing upward, through the same, a charge of small shot. The work was instantaneous and very effective. Somebody at Vallejo, according to the *Recorder* of that place, has since employed powder for cleaning boiler tubes. The tubes of a steamboat boiler, having become stopped up, were expeditiously and thoroughly cleaned by igniting half a pound of gunpowder, and by the rush of gas thus produced, accomplishing, in an instant, and without labor, a work which would have consumed much time in the ordinary mode of performing the same.

The Territory of Wyoming, still of a tender age, has decided to give to its mammas and sisters the right of voting. The Governor has not as yet signed the bill to this effect, which has been passed by the Legislature, but his wife will take care of that. It is supposed that now immigration will rapidly set in, and soon there will be a shrill cry for admission as a very "sister State" into the Union.

The editor of the Sacramento *Union* has seen samples of the ramie plant, raised in this State, in all its stages, from the raw material to the cloth. It has been introduced into the southern part of the State, and, so far as heard from, its cultivation bids fair to be a success.

New Substitute for Coal.

Experiments have lately been made in Brazil on "turba" or brown coal deposits, which have been found in the province of Bahia, on the banks of the river Marahu. These deposits are said to lie under a thin layer of sand, to average about thirty feet in thickness, and to exist in almost inexhaustible amounts; moreover, their situation affords ample facilities for working and shipment. The experiments tend to show that the substance gives off gas easily in larger quantities and of greater brilliancy than common coal, one ton of the turba yielding 12,000 cubic feet of 37-candle gas. Moreover, it yields an excellent oil for burning as well as lubricating, and the refuse of the material forms a valuable fuel. In the immediate vicinity of these deposits are large amounts of petroleum, similar to that obtained in Pennsylvania. The turba, having great absorbent qualities, will take up a large amount of liquid petroleum, which increases the specific gravity and also the supply of gas. An English company has been formed for the purpose of working the deposits under a concession from the Brazilian Government.

These statements, which appear to be well verified, are very interesting. Some time ago the world was excited on the subject of the probable exhaustion of the known coal beds. French chemists have been endeavoring to find some cheap way in which refuse matter, as chips, rags, or any organic substance, could be utilized for heat and light by resolution into its gaseous elements. But it seems probable that at least for a long time natural products will be cheaper and thus preferable. We need a greater knowledge of what treasures are still stored up in nature, especially in this State, of which we really know so little at present, and we hope that steps will be taken for a thorough investigation of our natural resources. Seeming economy in this matter is no economy, but a liberal allowance of money for this purpose will be repaid with compound interest, and that in no great lapse of time.

The Pacific Straw Works.—The attention of visitors at the Pavilion during the last Fair was attracted by a queer-looking machine situated in the music room, over which was the sign of the Pacific Straw Works, 335 Bush street. Until the time for lighting the gas, visitors gained very little information; after that time they received an insight into one of the most important (especially to the fair sex) enterprises of the city. This firm manufactnre every kind of straw, felt, illusion and buckram goods that the trade requires, for which they have every appliance that an experience of twelve years can give them. Two of the original proprietors are now in the firm. They started about 1857, on Ritch street; from there they moved to the corner of Market and Second, and then in 1866 to the premises now occupied by them at 335 Bush street, where they have ten presses capable of turning out 200 dry buckram frames per day. Besides the hands employed in the frame department, they also employ straw-sewers, straw and felt pressers, cleaners and dyers; also, illnsion frame makers. They keep a pattern maker, who is employed in getting up new styles. During the present dull times they have 21 persons employed, and in bnsy times find work for about 50. They supply the milliners and merchants in all parts of the Pacific coast, from Oregon to San Diego; also, Utah and the Sandwich Islands. Any one interested in those industries that serve to advance our importance as a self-producing State, would do well to spend a few hours in examining this branch of California manufactures.

Fruit in Michigan.—A fruit grower in Michigan has cleared $17,000 the first year from his peach crop.

A New Mill for a New Process.

We have had the pleasure of inspecting a large model of a new style of quartz mill, which is in a decidedly new channel, in both a mechanical and metallurgical sense. We cannot at this time give the details, which we reserve for a future issue. We would say, however, that after the stamps, it is a system of cylinders and precipitating vessels, which are operated upon electrically, while at the same time the pulverization, preparation, amalgamation, precipitation and concentration are effected entirely by machinery and without manual labor. Excepting the delivery of the ore into self-feeders for reducing, there is no further handling of it. The precious metal even, collected at each charge of 1,000 pounds, is conveyed by the mercury to, and deposited in, an iron safe, so that only he who carries the key can see, much less handle it. After depositing safely the precious metal, the mercury passes off and back to the points, whence it again goes on its amalgamating errand. This mill is designed for the process to be known as

Paul's Electric Dry Amalgamating Process.

The designer and inventor is Mr. Almarin B. Paul, who probably has had more varied and practical every-day experience with our California and Nevada gold ores, than any other man on the coast. He was among the first to build a mill in this State, and did build the first silver mill in Nevada, to work the Comstock ores on the spot, at a time when it was thought that they could not be worked there.

The model and system would at once be put before the public, but Mr. Paul, having an engagement to go to Colorado to erect his mill there, this will necessarily be delayed until his return.

The results of working this system on a large scale by Mr. Paul and others, show it to possess merit to an extent which calls for the attention of millmen to the system as it progresses. Mr. Paul claims that he can erect mills for his process at one-half the ordinary expense now incurred, can work much closer and at less cost for labor, power and repairs, and can treat successfully any kind of ore, be it impregnated with base metal or not, besides producing bullion free from impurities. One man can handle a 5-ton mill and not work one-half the time. A 10-ton mill will cost less in proportion than one which works five tons.

Combination of Nature and Art.—Not satisfied with the mere delineation of the face in black and white, photographers are calling to their assistance the talent of the artist, whereby they are enabled to give their patrons exquisite and faithful portraits in oil or in water-colors. In this city there is an establishment where such portraits of superior excellence are to be obtained, and we recommend our readers to pay a visit to Mr. Howland's New York Photograph Gallery, No. 25 and 27 Third street.

We have received from the glass works at the Potrero a piece of glass that has been allowed, after fusion, to cool slowly. The tendency in such cases being always to crystallize, the lower part of the piece in question is composed of globular crystalline masses, which, seen through the upper transparent part, present a very pretty appearance.

The Hearth and Home is one of the best family papers which comes to our table. It is a journal of real worth and excellence; its columns being filled with useful and profitable reading for old and young. It is always fresh and attractive, and though not yet a year old, has already taken a position in the front rank of American journalism.

We have a few Sacramento items, which will appear soon.

The State Legislature.

The Eighteenth Session of the California Legislature convened in the new capitol, at Sacramento, on Monday, and both branches soon effected an organization. The personal appearance of the members is above the average of their predecessors, and we hope they will give us a better quality and a less quantity of laws than in former sessions.

THE GOVERNOR'S MESSAGE.

Governor Haight delivered on Thursday his message to the Legislature. All parties join in praising the document, which is remarkably clear and impartial. The funded debt of the State has decreased over a million of dollars in the last two years, at the same time that the taxes have been reduced. The Governor recommends the following: Equalization of assessments and the formation of a State Board of Equalization; the survey and sale of mineral lands, and the withdrawal of all public lands from private entry and their disposal to actual settlers only; legislation to prevent the indiscriminate killing of small birds, which are so useful to the farmer in the destruction of insects; that a portion of the proceeds of the tide-land sales be devoted to the fund of the University; some allowance for the militia; that the management of the State Prison be taken from the hands of the State officers, and given to a Board of five Commissioners, one to retire every other year, with power to appoint a Warden who is to appoint the subordinate officers; moreover, the introduction of the so-called "Irish Prison System;" the repeal of the present mode of selecting Directors for the Insane Asylum, and the passage of a law providing for the appointment of eight or ten Directors, one to retire each year, who may select such resident and assistant physicians as are required, and have power to make removals for cause only, the Resident Physician to appoint and discharge subordinates; that the State Geological Survey be continued under Prof. Whitney; the repeal of the Agricultural Bounty Bill of 1862, which may lead to perplexing questions to the detriment of the public revenues; legislation to facilitate proper immigration; that the proposed constitutional amendment, prohibiting appropriations of money for a longer period than two years, be submitted to the people. The Governor urges a strict adherence to the policy of economy, and closes with sound, although perhaps not novel, remarks.

TITANIC IRON.—Ilmenite, or titaniferous iron, has been mined more or less in Norway for some time, and brought to England for fettering puddling furnaces, for which purpose it is especially adapted. But this did not pay; and as chemists have failed to smelt it, except at too great cost, the mines were given up. Recently attempts were made to make bricks with this ore in combination with fire-clay, for the purpose of lining furnaces. Some of the prepared bricks were placed on the bridge of a furnace to try them; but as soon as the ingredients of the clay were reduced, the bricks disappeared. Here was a clue to the flux required; and now the ore is regularly smelted, producing a remarkably fine kind of iron, superior even to Swedish.

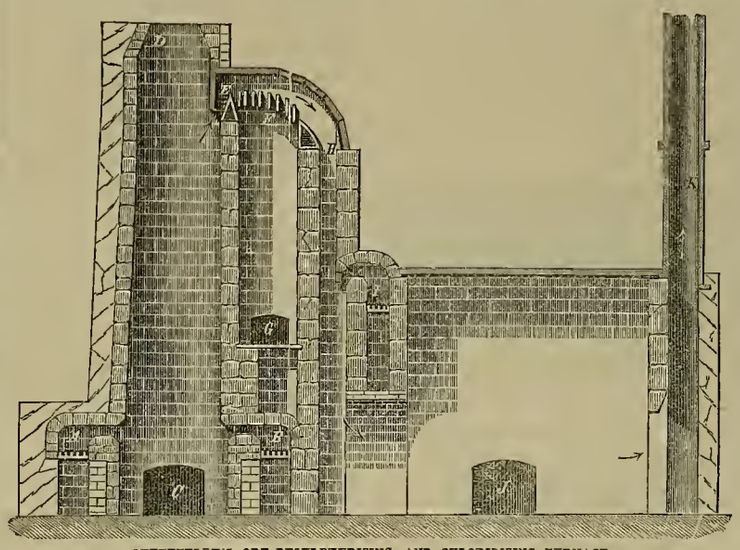
WHY HARD WATER IS NOT SO GOOD FOR WASHING AS SOFT.—Hard or spring water, in percolating through the ground, becomes charged with various substances, which it dissolves in its course. The most common salt in it is sulphate of lime. When soap is used, the sulphuric acid unites with the alkali of the soap, whose fatty acids thus set free unite with the lime, forming an insoluble earthy substance, which floats on the surface of the water. The soap thus losing its influence, the water feels hard, and imperfectly performs the functions of ablution.

The Stetefeldt Furnace at Reno.

We have spoken in a late issue of this furnace, which has been running at the mill of the Nevada Land & M. Co., near Reno, since the third of November, roasting a great variety of ore. Mr. Stetefeldt has lately called on us, and kindly furnished us notes, from which we write the following, and that all the more readily, as of late several inquiries have been made with regard to this and similar furnaces.

The annexed engraving will convey a correct idea of the construction of the furnace. The ore, crushed together with the necessary amount of salt, is sifted into the shaft, D, in a continuous stream. In falling about twenty-five feet through the heated air and chloridizing gases, its chlorination is effected almost instantaneously. As soon as a charge of about 1,000 pounds has accumulated at the bottom of the shaft, it is discharged through the door, C. By charging the fire-places, A and B, alternately, a very uniform heat is obtained.

As the pulp is very fine, a large percentage of dust is formed, which is carried forward by the draft through the flue, E.



STETEFELDT'S ORE-DESULPHURIZING AND CHLORIDIZING FURNACE.

This dust is created in two ways: first, by the very finest particles of the pulp, which escape at once through the flue, E; second, by those particles of the ore which fall a certain distance down the shaft, get roasted, lose in specific gravity, and are again carried upward by the draft. The latter settle down into the dust-chamber, G; the former descend through the flue, H, into the dust-chamber, J.

This dust, which forms from twenty to thirty per cent. of the whole bulk of the ore, would be very imperfectly roasted if its chlorination were not effected by the application of the fire-place, I. The flame of the fire-place meeting the dust, together with the chloridizing gases arising from the main shaft, effects instantaneously its complete chlorination. This is quite an important feature: that the finest particles of the ore, no matter where they settle in the extensive system of dust-chambers connected with the furnace, are perfectly roasted, and at once ready for amalgamation.

The furnace in Reno has a capacity of from fifteen to twenty tons every twenty-four hours. The workmen necessary to run the furnace for twenty-four hours are: two men to attend to the feeding and conveying machinery; three firemen; and three men to discharge and cool the roasted ore. As the latter take at the same time the ore to the pans, only one-half of their time should be charged to the roasting. The amount of salt used is six per cent.; but we believe that this percentage could be lowered still more. From two to three cords of wood are burned in twenty-four hours, depending upon the amount of sulphurets in the ore. Taking these figures, the expense of running the furnace for twenty-four hours in Reno is:

Labor of 6½ men at $3	$19 50
Wood, 2½ cords at $6	15 00
Salt, 1,800 pounds, at 1½ cents	27 00
Total expense of roasting 15 tons	$61 50

Or $4.10 per ton. Calculated for a capacity of twenty tons, the total expense would be $3.52 per ton.

The expense of roasting in reverberatory furnaces would be, in Reno, from $11 to $12 per ton.

From a large number of chlorination tests, Mr. Stetefeldt found that from 88 to 92½ per cent. of the silver is chloridized. This certainly is a very favorable result, considering that it was obtained at the very beginning, and with laborers unskilled in the management of the furnace. A number of improvements have been devised, which will reduce the expense of roasting still more.

Mr. Stetefeldt adds the following: "The Stetefeldt furnace has been confounded by some with the Gerstenhofer or the Terrace furnace of the American Metallurgical Co., of New York. The Gerstenhofer furnace is a shaft filled with shelves or inclines, and is intended to desulphurize and oxydize certain ores and smelting products. The Stetefeldt furnace is a plain shaft (with fire-places attached), through which the ore, mixed with salt, falls for the purpose of being chloridized. It is, furthermore, provided with a fire-place for the roasting of the dust, which in the Gerstenhofer furnace escapes unroasted.

"Stetefeldt, in his first experiments in Austin, erected a Gerstenhofer furnace for chloridizing roasting, and found that it was entirely unfit to do the work. The reasons are:

1st. The ore does not drop down the shelves, but sticks to them, and stops up the furnace in a short time.

2d. From 20 to 30 per cent. of the ore escapes unroasted through the flues.

"The Gerstenhofer and Stetefeldt furnaces are, therefore, two very distinct inventions, aiming at the same time at different ends."

The inland papers are very enthusiastic on the subject, and pronounce the furnace a "complete success." We find, moreover, little items which are of greater weight than mere words. For instance, the Reno *Crescent* speaks of two lots of ore worked: one, which would have yielded $69 net per ton if sent to San Francisco, actually *did* yield to the owners $94; another, which did not pay to ship to San Francisco, netted the owners $30 per ton. Such facts as these are the very arguments needed. This furnace was patented by Chas. Stetefeldt, of Austin, Nevada, Dec. 31, 1867.

Since the above was in type we have received a letter from a party connected with the furnace at Reno, from which we make the following extract: "The furnace has been running continually since starting up, on the 3d ult., and over 400 tons have been put through, with a uniform success. Many millmen have been here, who endorse it as being the thing, and assert that it will take the place of all other furnaces for chloridizing ore. I am not interested in the furnace, further than the rights acquired for working the ores of Humboldt county, and only give this information for the benefit of the public."

Summary of U. S. Mining Statistics.

Not having had time to complete his annual report before the meeting of Congress, Mr. R. W. Raymond, the Commissioner of Mining Statistics, has prepared a summary of his mining operations during the year. Colorado, Utah, Nevada, California, Oregon, and Idaho have been visited. The prospects of Colorado are regarded as very flattering. The product of bullion from Oregon and Idaho is unusually small, principally on account of the extraordinary drought. The product of California also will probably be less than that of last year, for the same and other causes. In Nevada, the greater yield of White Pine will probably at least counterbalance the deficiency from Washoe. The Commissioner thinks, however, that he sees a brighter future in all mining regions.

Mr. Raymond urges strongly the founding of a National School of Mines, which he regards as an imperative necessity; and in this we think he will be supported by all connected with the mining interests of the country. Private mining schools do not seem to fulfill all the requirements. A national school would probably be supplied with competent instructors, and many would be able to avail themselves of its advantages who now are unable to get the instruction which they desire. Moreover, as particular attention would of course be given to American ways of mining, milling and smelting, not only would information be disseminated generally, as to exactly what has been, and is being done, but as a result of this, great progress would undubitably follow.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING NOVEMBER 30th.

PITCH-BOARD.—John R. Drew, San Francisco.

FAUCET ATTACHMENT TO CANS.—John H. Garrigan, Sacramento, Cal., and Francis L. Hall, Reno, Nevada.

GRAPE CRUSHER AND STEM SEPARATOR.—Turner C. Purington, Lincoln, Cal.

CHAIR SPRING.—Turner C. Purington, Lincoln, assignor to himself and Antoine Mayoux, Marysville, Cal.

WATER-CLOSET PAN.—W. Smith, San Francisco.

ANCHOR.—Elisha Trask Barlow, San Francisco.

BELLY-BAND FASTENER. — Chas. H. Horne, Astoria, Oregon.

ACTION OF ACIDS ON AMALGAMATED ZINC.

The resistance of an amalgamated surface of zinc to dilute sulphuric acid, has been attributed to its uniformity. An irregular surface favors the action of the acid. Daniell inclines to the view that it is the appearance of hydrogen bubbles on the prepared surface which prevents the access to it of the water; to prove which he showed that dilute nitric acid in the sulphuric will dissolve the zinc sheet within a few hours. D'Almeida has lately published some experiments, which show that after removing, by mechanical means, this coating of bubbles, it will at once again make its appearance, and its removal from the zinc will further the action upon it. The solubility of the amalgamated zinc is largely increased by a mixture of acids—such as sulphuric with hydrochloric, sulphurous acid, etc. Polished metallic surfaces alone retain their hold of this gas to a certain extent, but not as fully as those amalgamated. It seems simply to be the amount of polish which determines the escape of the gas.

Reading for the Hour.

John

Is going to have a hard time of it, according to appearances. A certain society of this city has been visiting his abodes, looking under his beds, examining his gods and other household furniture, analyzing his peculiar perfumes, measuring the length of his cue, and testing his honesty and her virtue in ways unknown to the public but highly satisfactory to themselves. The result of all this visiting, looking, examining, analyzing, measuring and testing, is that John's abodes have been declared unclean, his beds dirty, his gods and furniture cracked, his perfumes stronger than the law allows, his cue of a disrespectful length, his honesty and her virtue wanting; or, in a word, all Johns are thieves.

Now, John, you thief, we propose that you shall leave these sunny shores. Take your cue in your hand and walk. Go to your home, where they don't want you; or go East, where they think they do. But don't go by way of Tennessee, for as sure as you present your smiling, copper-colored countenance at the door of that State, so soon will your aforesaid countenance change its color and its aspect; for the august body which guides the helm of that country has solemnly resolved, declared and sworn, that it will punch the nose of any John that tries to intrude his unwelcome presence on the people of Tennessee.

But hold on a minute, John. If it really would be very hard on you not to be allowed to remain in our glorious State, perhaps we'll let you off easy. Yes, John, if you'll pay us $500 apiece, and agree to give us a fifth of what you steal, perhaps we'll let you stay. We won't promise positively, but *perhaps* we will. Now we think of it John, we guess you'd better make this little arrangement and stay with us, and perhaps, by and by, if you improve in these little ways of yours, which we've found out, perhaps we'll get you on the Board of Supervisors, and then, my eyes! John won't we enjoy ourselves?

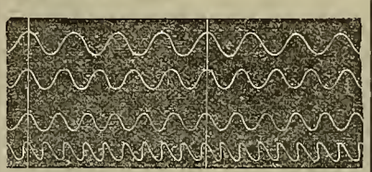
Assembled Wisdom.

This week assembled four, more or less important bodies—the Œcumenical Council of the whole world, the Congress of these United States, the Legislature of this particular State, and the Board of Supervisors of our own peculiar city. From the first of these bodies we do not expect anything, and it would do no good if we did; from the second we are allowed to hope for some good results; from the third we expect very much, from the good and lengthy advice which we in common with all the other papers have given, and shall continue to give; but the very first action of the last induces us to button up tightly in our pockets our few remaining "bits" and look on anxiously from a distance. A few more "cuts" into our purses, a couple more of $90,000 bridges, and a hospital or two thrown in at the tune of half a million or so, will lead us to contemplate, with more seriousness than we formerly thought we possessed, the superior advantages of a quiet life in some retired country town. We don't fancy the sound of another golden "ring," which faintly echoes in our ears, "ever near and louder sounding."

The irrepressible Train is still going, and having reached St. Louis has relieved his mind by expressing his unfavorable opinion of the country in general, and of several cities in particular. The whole Pacific coast is, according to his idea, a grand humbug, Chicago and San Francisco are a couple of dead-heats, St. Louis people a set of sleepy drones, New York is dependent entirely on Vanderbilt, our principal men are a set of fools, etc. The only decent place in the whole Union, we infer, is Omaha, and George Francis Train is the worthy father of it.

What Sound, Light and Heat Are.

Every one who has dropped a stone into the water of a still lake has noticed the system of waves which, with its ever-increasing circles, spreads in every direction from the stone. So when two stones are struck together in the air, a similar system of aerial waves spreads in ever-widening spheres through the atmosphere, and these waves, breaking on the tympanum of the ear, produce the sensation called sound. Two stones thus struck together give rise to waves of unequal length, following each other at irregular intervals; and such waves produce on our auditory nerves the sensation which we call noise. But if we set in vibration the string of a piano-forte or the reed of an organ pipe, we excite a system of waves of equal size, which succeed one another in perfect regularity, and these breaking on the ear produce what we call a musical note; and it has been proved that the faster the waves follow one another, the higher the note. A simple way of showing this, is as follows: Attach needles to one prong each of several tuning forks. Now, if these forks are set in vibration, and a piece of smoked glass drawn across the points of the needles, the soot on the glass will be scratched off in wavy lines, and the higher the note of a fork, the greater number of curves it will mark in the same time. The accompanying cut exhibits the curves of a common chord, the upper and the lower lines being those of the octave.



In the same way every luminous body, as for instance, a candle flame, excites a similar system of waves in the medium which we call *ether*—a medium more subtle than air, and which, as we assume, pervades all space, and this, too, whether the space is filled or not, at the same time by other forms of matter; and it is these hillows which, passing through the humors of the eye and breaking on the retina, produce the sensation we call light, or falling on the skin, excite the less delicate nerves of feeling and cause the sensation of heat. Moreover, from actual measurements, we find that the difference between colors is of precisely the same kind as the difference between notes. Thus we find that when the number of waves is 477 million millions per second, the sensation of *red* is produced; when 506 million millions, *orange;* when 535 million millions, *yellow;* when 699 million millions, *violet*. Between red and violet come the other colors of the rainbow.

Moreover, we have proof that there are waves in the ether far smaller, and undulating far more rapidly than those which produce violet light; so small that they do not even jar the nerves of the retina, but which, nevertheless, breaking on the prepared plate of the photographer, leave there an impression which, developed by his skill, becomes a beautiful copy of nature or of art. On the other hand, there are waves in this same ether so large that the delicate retina cannot vibrate in unison with their rough beats, but which, breaking on the surface of the skin, disturb the coarser nerves of feeling and produce the glow of heat. Most of the waves which impress the optic nerve will also affect the nerves of feeling, but many waves which produce the sensation of heat are far too large, and undulate too slowly to set in vibration the retina of the eye.

As the ether-waves, breaking on the eye, more or less rapidly, produce the different sensations of color, so when breaking on skin, they occasion differences in the sensation of heat. There are waves of heat which break on our nerves of feeling like the shrill cry of the cricket on the ear, and seem to penetrate to the very brain, while there are others which fall like the low tones of an organ, diffusing throughout the system a genial glow. Such, for example, is the difference between the heat from a hard-coal fire and that from a steam radiator. The waves of the first sort, from their small size and rapid motion, can readily pass through glass and other transparent media, when the large waves with their slow motion are in a great measure stopped. —*Prof. Cooke.*

Did the Ancient Egyptians Understand Photography.

This question pleasantly opens an article upon photography in the *Engineer*.

"Once upon a time Mr. Wm. Herapath, the toxicological chemist of Bristol, unrolled an Egyptian mummy, tumbling it over and over as he wound off yard after yard of bandages. The lengthy wrappings were marked with hieroglyphical characters, and where the ink appeared to have run the stains looked very much like those of nitrate of silver. Our chemist at once put a piece of stained linen under the blowpipe, and obtained from it a button of metallic silver; it is therefore, he concluded, certain that the ancient Egpytians knew how to dissolve silver and make it into a permanent ink. Yet nitric acid was not known in Christendom till 2,200 years after the date of this mummy, and it must be remembered, that nitric acid could only be obtained by the use of sulphuric acid. The bandages were the natural color of the flax, except where some of the threads had been dyed with indigo. Here and there figures were painted upon the cloth with vegetable reds, and the paint upon the face was made of finely powdered chalk.

Now neither the Egyptians nor anybody else could long use nitrate of silver in solution without finding out that fingers or other things smeared with it turned black in the light. To what degree then is it possible that their knowledge of photography extended? It is certain that the Egyptians made beads of crown glass 1,500 years before the Christian era. They possessed some knowledge of chemistry, for their glasses are colored with metallic oxides; they knew how to work glass, for paintings and pieces of sculpture of theirs representing glass-blowers at work, have been found in their temples. They also knew how to work glass, in some respects, better than the English; for they made solid rods of glass, with most delicate pictures running through them from end to end, so that if the rod were cut into little circular slices each piece would show the picture quite perfect.

The ancient Egyptians knew how to make glass lenses, and their knowledge of glass-making spread among surrounding nations. May these people not only have been "up" in the rudiments of photography and photographic optics, but also in the "waxed paper process," in the "tannin process," and in the photographic properties of the bitumen of Judea? This much is certain, that respectable mummies were often saturated with tannin, soaked in wax, and gilt all over outside. But if they took photographs, why do we find none in their tombs? If all the photographers in Europe were buried a fathom deep to-morrow, and all their works with them, it is probable that their pictures would fade off the paper nearly as fast as their flesh wasted off their bones. No photographer would like to guarantee that the pictures taken by any of his neighbors will continue unchanged for ten years, and few but pictures taken by the carbon process, or transpareucies cemented between two plates of glass with Canadian balsam, are likely to last in good condition more than a century."

Sacramento is having a sudden spasm of virtue. The susceptible young men of that city have been taken under the especial tutelage of the police, who remove temptation from their eyes by removing the "pretty waiter girls" to the lock-up. Ugly girls, we presume, are still allowed to act in the capacity of Hebes. But as the idea of beauty is somewhat comparative, we are curious to ascertain how and where the line is drawn between the pretty and the homely ones. Does the Mayor or the Board of Aldermen, the Chief of Police or the judicial bench, decide on this point, or is the decision left to the individual members of the police force? What an embarrassing state of affairs. We wait with anxiety for the result, and would like in the meantime to have a strict definition of what constitutes female beauty, for our landlord having given us bachelor-lodgers a John as our especial chambermaid, our fine perceptions on the subject have become somewhat blunted.

Tea Adulterations.

[Written for the Min

Statistics show that of all the teas imported into this country from China and Japan, more than two-thirds are of the *green* sort, of which there are various brands and qualities. Few people, however, seem to be aware how poisonous this green article is. So popular is it that the black, and only wholesome variety of tea, is scarcely to be found at any restaurant or hotel in this city, and very little of it is kept on hand by dealers in the article.

In China, the tea for exportation is colored a bluish green by means of a fine powder composed of four parts gypsum to three parts Prussian blue. This coloring matter is sprinkled over the teas during the last five minutes of the process of roasting. The leaves are then stirred about rapidly by the hands of the workman, in order that the color may be equally diffused.

The natives acknowledge that they *never drink dyed teas themselves*, but that as *foreigners seem to prefer* having a mixture of Prussian blue and gypsum with their tea, to make it look uniform and pretty, and as these ingredients are cheap enough, the Chinese have no objection to supplying them, especially as such teas always bring a higher price. Mr. Robert Fortune, in his interesting work, "The Tea Districts of China and India," describes this abominable practice very fully. He found, by careful examination, that to 14¼ lbs. of black tea were applied 8 mace, 2½ candareens, or rather more than 1 oz. of coloring matter. He says: "To every hundred pounds of colored green tea consumed in England or America, the consumer actually drinks more than half a pound of Prussian blue and gypsum. And yet, tell the drinkers of this colored tea that the Chinese eat cats and dogs, and they will hold up their hands in amazement, and pity the poor Celestials."

A good test for such tea is to place a small quantity of it upon a sieve, and pour gently a stream of water upon it; the tinging of the liquid will show to what extent the adulteration has been carried. Gunpowder tea—the black as well as the green—is especially open to this objection, and byson is about as bad. The two former "have a larger admixture of *lye tea*—a compound of sand, dirt, tea-dust, and broken-down portions of other leaves worked together with gum into small nodules."

An analysis of this detestable compound, as given by Mr. Warrington, an English chemist, shows that it contains 45 per cent. of earthy matter. When mixed with black gunpowder, or "scented caper," it is faced with black lead; when with the green variety, Prussian blue; while French chalk and turmeric furnish the required bloom. A great deal of the cheap tea sold in this country is made up here from re-dried tea leaves, together with the leaves of the hawthorn, sloe, and bay, to say nothing of the chapparal.

The moral to be drawn from these facts is plain enough: drink a good quality of *black*, rather than *green* tea, and there will be a marked difference of effect upon your nerves. Your doctor's bill will be much less, and you will no longer wonder what used to keep you awake all night after drinking *just one cup* of that nice-looking green tea. E. R. H.

Removing the Gum from New Silk.—Ammonia is now used by French dyers instead of soap. To a kilogramme of silk they use ten litres of water and from 250 to 500 grains of carbonate of ammonia, according as the silk is white or yellow and hard. The silk is kept in the solution, heated to 80° or 90° Cent., for an hour, and then it is boiled for half an hour. By this treatment silk loses from 22 to 28 per cent. of weight. To finish the process it must be rinsed in a boiling bath containing one or two per cent. of soap, which bath may be used many times over.

How "Watered" Goods are Produced.—Watered goods are first woven plain and then passed between two iron cylinders, one of which is heated; while the other remains at the ordinary temperature of the atmosphere. The tension and abrasion of the surfaces of the goods produces the condition known as "watered."

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Perpetual Day.

The midnight of those northern latitudes where the sun does not set, is thus graphically described by ono of a party of adventurers who recently witnessed the scene from a Norwegian cliff: "The ocean stretched away in silent vastness at our feet; the sound of its waves scarcely reached our airy lookout; away in the north, the huge old sun swung low along the horizon, like the slow beat of the pendulum in the tall clock of our grandfather's parlor corner. We all stood silent looking at our watches. When both hands came together at twelve, midnight, the full round orb hung triumphantly above the wave—a bridge of gold running due north spanned the water between us and him. There he shone in silent majesty, which knew so setting. We involuntarily took off our hats; no word was said. Combine, if you can, the most brilliant sunrise and sunset you ever saw, and its beauties will pale before the gorgeous coloring which now lit up ocean, heaveu, and mountain. In half an hour the sun had swung up perceptibly on his heat, the colors changed to those of morning, a fresh breeze rippled over the flood, one songster after another piped up in the grove behind us—we had slid into auother day."

THE value of the gold exported from New Zealand from April 1, 1857, to Juue 3, 1869, was £18,193,289, corresponding to 4,632,490 ozs. The amount produced in the first six months of 1868 was 298,802 ozs.; in the correspouding period of 1868, 320,467 ozs. The number of miners engaged in the gold fields of Victoria is stated to be 69,890; the extent of auriferous ground workcd, 894¾ square miles; and the amount of gold obtained in the six months ending June 30, 1869, 753,833 ozs.

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Having established the first Practical Mining and Metallurgical School in the United States, I would call the attention of gentlemen who may wish to obtain a practical knowledge of
Chemistry, Assaying and Metallurgy,
That I am prepared to teach all the above branches in less time than in any European School.
I also undertake to work any kind of ore, or mineral substances.
Special attention I would call to all parties who have the so-called rebellious ores, that I undertake the construction of any kind of Smelting, Chlorination, Amalgamating, Refining, or Manufacturing Works.
I refer not to single persons, but to all tho works which I build in the States of Nevada and California, all of which are in successful operation.
For terms, apply to JOS. MOSHEIMER,
Practical Chemist and Metallurgist.
Office, 328 Montgomery street; Metallurgic Works, 2005 Powell street, San Francisco. 16vl9-3m.

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ASSAYER AND WORKER OF ORES.
No. 10 Stevenson street, near First, San Francisco.
Highest price paid for choice lots of Ores, Sulphurets, Assay Ashes, Sweepings, etc., etc. Students instructed in all branches of Metallurgy, on liberal terms.
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20vl9-3m

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THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.
Prices varying from $1 50 to $2 per day for Board and Room.
FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.
☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents
21vl2 F. E. WEYGANT, Proprietor.

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RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
4vl6-3m

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Architect, Designer and Draughtsman,
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☞ Sole Agents for Barstow's Metallic Burial Cases and Caskets. 25vl4tf

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Interest paid on Deposits. Money Loaned on Real Estate.
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Importers and Jobbers of
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Tho highest market price paid for ores assaying 10 per cent. and upwards 23vl7qr

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Mine Commission Merchants,
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Will negotiate the sale of Mines and receive consignments of Ores from Battle Mountain and all parts of the Pacific Coast. They will sell or work the Ores, as the consignors may direct. They guarantee to pay the highest prices for Gold, Silver, Copper, Galena, Lead, Zinc, Antimony and Tin Ores, on the shortest notice. They will make test or working Assays for prospectors at a very low figure. They will also receive orders and furnish Miners' and Farmers' Supplies, including machinery of all kinds, at the lowest prices. N. B.—All correspondence with us will receive prompt attention. 10vl9-3m

WALTHAM WATCHES.
Let every one who wants a Watch, read this carefully
Especially if in some remote out-of-the-way place.
Now that the railroad is open, we propose to give the residents of CALIFORNIA the opportunity of getting single genuine Waltham Watches at the
Lowest New York Wholesale Prices.
We sell more Waltham Watches than any other establishment in the country, either wholesale or retail; we send great numbers to every section of the country by Mail and Express, carefully packed, and in perfect running order. Our plan is this: You want a Watch, and see our advertisement; now, we want you first to write to us for our Descriptive and Illustrated Price List; we will send it, postpaid, by return mail. It explains all the different kinds, tells the weight and quality of the cases, with prices of each; you then make a selection of the kind you prefer, and send us your order. We will then send you the Watch by Express, with the bill to collect on delivery. We give instructions to the Express Company to allow you to open the package and examine the Watch; if it suits, you can pay, and take it; if not, you are under no obligation to receive it; and if it is taken, and afterwards does not prove satisfactory, we will exchange it, or
REFUND THE MONEY.
As an indication of the Prices, we will quote one Watch from our list. The P. S. BARTLETT, Lever Movement, with Extra Jewels, Chronometer Balance, Patent Pinion, Patent Dust Cap, and all the other late improvements, in a Solid Coin Silver Case,
$28 in Greenbacks, or about $20 in Coin.
All the other kinds, both gold and silver, in the same proportion. Do not order a Watch till you have sent for a Price List, as it contains a great deal of information regarding these Watches that will enable you to make an intelligent selection. Don't forget, when you write, to state that you saw this advertisement in the MINING AND SCIENTIFIC PRESS, and you need not put in stamps for return postage. Address in full,
HOWARD & CO.,
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W. S. HOBART, Esq., Virginia City, Nevada.

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GOLD COIN.
Office S. W. corner of Montgomery and California streets.
Fire and Marine Insurance.
All Losses paid in U. S. Gold Coin.
CHR. CHRISTIANSEN, President
B ROTHSCHILD, Secretary. 20vl7-3m

Chicago Advertisements.

STEELE & YANTIS,
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Are authorized to receive advertisements for the Mining and Scientific Press at our lowest rates, and also for any Daily, Weekly or Monthly Newspaper or Magazine in America, at publisher's lowest prices. Estimates for any number of papers desired furnished gratis. 11vl9

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Leffel, Bryson, Bodine and Chicago Turbine Water Wheels; Mill Stones and Bolting Cloths. All kinds of Cleaning Machines, including Smutters, Separators, Packers and Bran Dusters. Scales, Belting, Feeks, etc. Mill Irons and all kinds of Castings. P. O. Box, 274.
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MANUFACTURERS OF
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Established at Seneca Falls, N. Y., in 1845. 11vl9 3m

Auction Notice.

We will sell at Public Auction, to pay storage and charges, the following described Merchandise, at Battery Street Warehouse, 819 Battery street, on MONDAY, DECEMBER 27, 1869:

	NAMES.	AMOUNT.
2 cases	E. J. Swift	$63 00
5 bdls. brackets	H. Chapman	59 50
3 cases	E. G. Whitcomb	132 00
2 bags quartz	Geo. Roberts	39 50
1 tub & cont's; 1 bag.	C. S.	41 00
1 sack ore	John Nightingale	38 50
1 ½ cask	F. C. Belden	37 50
1 case	Capt. J. Porter	37 50
1 sack rock	J. M. Buffington	36 50
1 case	J. F. Sherwood	36 50
1 firkin	D. O. C.	35 50
6 sacks quartz	E. M. R.	61 1
1 sofa frame; 3 pkgs.	W. L. Needman	36 50
1 box (H. P.)	H. Palmer	36 50
1 case (J. M.)	J. Mosheimer	36 25
1 sack cement	McDonald	33 50
1 sack rock	H. A. Gleson	36 50
1 keg wine	Witts	34 50
1 cask	A. B. Earle	51 30
1 lot traps	Mrs. Carpenter	62 25
1 case	W. Krouse	31 50
1 tierce	N. Williamson	33 00
1 bale sacks	J. M. S. Taylor	31 50
1 sack rock	E. N. Robinson	30 50
1 case	S. Loffman	30 50
6 small cases	G. H. Hanheimer	49 00
2 cases	S. F. B. Factory	29 75
1 case	E. W. Roberts	29 60
1 box	Chas. E. Lang	28 50
1 box merchandise	C. H. & Co.	28 50
1 trunk	Chas. P. Wilder	29 50
1 lot castings, shafts and wheels	Palmer, Knox & Co.	128 00
1 box	O. R. Woodman	27 25
1 case	A. H. Wilber	29 50
2 sacks quartz	W. H. Smith	27 00
1 ½ cask	M. B.	21 50
1 bdle deer skins	L. Decchen	21 50
2 cases	G. S. Beardsley	21 50
2 hay forks	John Findley	20 50
1 case	Mrs. A. K. Turner	21 00
1 chest	H. Williams	19 75
4 pkgs pipe and iron	S. P. Roberts	32 85
1 bbl whisky	B. Mendersoll	21 00
1 box	J. & F. & Co.	20 50
2 iron hubs; wire cloth.	Treadwell & Co.	20 00
1 pkg castings	Wm. Lynn	20 25
1 trunk	Mrs. Willis	21 00
1 case	S. W. & Co.	18 50
1 box	L. Danceri	19 50
1 barrel	J. H. Seadent	19 00
4 boxes	G. A. Dyson	53 75
1 case bacon	H. Rosstent	18 75
1 case	Locke & Montague	30 75
1 case	Cal. Fuse Co	19 50
1 bbl wine	Frank Glas	17 00
2 bundles	Ordcr	16 50
1 bdl sash	T. J. Hughes	30 79
1 box	S. S. Allen	30 00
2 cases	S. Hamark	17 50
1 case	Thos. Thyser	44 00
6 boxes	Union Tel. Co.	31 00
10 cases	L. P. & Co.	22 75
1 trunk and 1 case	J. H. Peck	23 00
24 bbls sal soda	Order	95 00
4 pks (B in diamond)	Order	68 60
1 chest	J. H. Treadwell	50 75
2 cases	C. B. Land	30 00
1 bundle	Dr. Matthews	49 25
1 bale	W. Shears	47 50
2 cases and 1 hf bbl.	Mrs. A. Holmes	43 00
1 case	Orik Johnson	49 75
1 case	Mrs. Flannigan	44 90
1 box	J. H. O'Brien	24 25
1 chest	W. H. Dalrymple	61 19
1 case	J. S.	23 25
1 trunk and 1 box	W. H. Herrick	51 35
1 case and 1 trunk	Mrs. S. P. Penney	49 40
1 box tobacco	J. A. D.	20 00
1 trunk	M. C. Parker	19 00
1 case and 1 bag	S. L. Rogers	20 50
1 keg wine	J. F. Hubbard	17 50
1 box	Lams & Co.	29 25
3 cases	H. H. S.	45 00
1 bellows and 1 anvil	L. C.	24 50
1 bale hops	B. S. & Co.	47 50
1 case	D. M. Wheaton	27 00
3 cases	S. S. Ingham	49 50
1 case	H. Davenport	60 50
1 box	J. W. Jenkins	22 50
5 kegs and 1 box	J. M. Sutton	50 00
5 sacks ore	Valentine & Bro	39 00

W. A. HOLCOMB & CO.
S. L. JONES & CO., Auctioneers. 22vl9-5t

COKE! CHEAP FUEL!
Further Reduction in Price!
For quantities less than 100 Barrels, 75 cents per barrel; for larger quantities, 70 cents per barrel, at GAS WORKS, corner of Howard and Fremont streets, and corner of Second and King streets. 21vl9

New Incorporations.

EXCELSIOR M. Co.—Yellow Pine, Nye county, Nev. Dec. 8. Capital stock, $576,000; 14,400 shares $40 each. Trustees: A. Giorgiana, N. Dabovich, Alex. Mac Abee and W. A. Kollmyer.

MECHANICS' INSTITUTE.—Re-incorported. Trustees: A. S. Hallidie, J. R. Wilcox, H. L. Davis, J. H. Gilmore, Geo. Pardy, David R. Coleman, Wm. C. Pease, Henry C. Macy, W. W. Hanscom, H. V. Herrick, John Hancock, Jacob Browning, I. M. Scott and Joseph Britton.

HALL AND VAN DYKE CONSOLIDATED COAL M. Co.—Capital stock, $2,000,000; 20,000 shares, $100 each. Trustees: Geo. Hearst, Hall, Mc.Donald, Gashwiler and Bell.

A Word for Home Inventors.

OAKLAND, CAL., December 1, 1869.

MESSRS. DEWEY & CO.—Gentlemen: Permit us through your paper to return our earnest thanks for the prompt and successful manner in which you have conducted the various matters of business with the Patent Office committed to your care, more especially in securing for us our last valuable patent in the face of so many difficulties. Were it an ordinary case, in which you had simply secured us a patent, and for which services you had received a suitable equivalent, we should hardly consider you entitled to our thanks, however much we might feel gratified with your professional ability, uniform courtesy, or success. But this seems to be an exceptional case, and entitled to peculiar consideration. Without entering here into a detailed account of the legal complications and various discouraging circumstances you were obliged to contend with, suffice it to say, that your almost unhoped for success, securing, as you did, a full patent, despite all these obstacles, in so short a time, was scarcely less surprising than gratifying to us; and we feel it a pleasant duty to offer you this merited testimonial of our appreciation for the valuable services rendered, and to return you our sincere thanks for the same.

In closing, we would say to the public that this is entirely voluntary on our part, as Messrs. Dewey & Co. neither asked it at our hands, nor knew that we intended giving it. It is simply a free-will offering to professional skill and reliability, and a word of friendly counsel to others on this coast who may be possessed of valuable inventions on which they wish to secure patents. To all such our earnest advice is to place them at once in the hands of Dewey & Co., instead of being driven to it by a sad experience like our own.

Yours truly, HUBERT BURGESS,
JAMES STRATTON.

"A SLIGHT COLD," COUGHS,—Few are aware of the importance of checking a Cough or "SLIGHT COLD" in its first stage, that which in the beginning would yield to a mild remedy, if neglected often attacks the lungs. "*Brown's Bronchial Troches*" give sure and almost immediate relief. "*The Troches*" have *proved* their efficacy by a test of many years, and have received testimonials from eminent men who have used them.

BOOK ON EARTHQUAKES.—A Treatise on Earthquake Dangers, Causes and Palliatives, by Prof. Thomas Rowlandson, comprising Earthquake Dynamics, Earthquake Waves, Sound that attends Shocks, Lime, Mortar, etc., Cosmogony and Seismogony, Phenomena of the Neapolitan Earthquake of 1857, and General Observations respecting Structural Arrangements. Published by Dewey & Co., Mining and Scientific Press Office, San Francisco, 1869, containing 96 pages. Price 50 cents, postago free.

C. MULLER, optician, 205 Montgomery, stands first in his profession, and all those who suffer from defective eye-sight should apply to him. *

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

PAIN KILLER, after a thorough trial by innumerable living witnesses, has proved itself THE MEDICINE OF THE AGE. It is an internal and external remedy. One positive proof of its efficacy is, that its sales have constantly increased, and wholly upon its own merits. The effect of the Pain Killer upon the patient when taken internally, in case of Cold, Cough, Bowel Complaints, Cholera, Dysentery, and other affections of the system, has been truly wonderful, and has won for it a name among medical preparations that can never be forgotten. Its success in removing pain, as an external remedy, in cases of Burns, Bruises, Sores, Sprains, Cuts, Stings of Insects, and other causes of suffering, has secured for it such a host of testimony as an almost infallible remedy that it will be handed down to posterity as one of the greatest medical discoveries of the nineteenth century.

REDINGTON & CO. and HOSTETTER & SMITH, San Francisco, General Wholesale Agents. de4

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

RETURNED.—Dr. J. H. Paine, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

SEND FORMER ADDRESS when you wish your paper directed to a new place.

BLOCK TIN AND SOLDER WIRE, broom wire, piano covering wire, etc., manufactured by Joshua Gray, 437 Brannan street. 24v19-3m

New Mining Advertisements.

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the ninth day of December, 1869, an assessment of two dollars and fifty cents ($2.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twelfth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-ninth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary.
Office, 220 Clay street, San Francisco, Cal. dec11

Mining Notices—Continued.

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Sharp	3	100	$50 00
J L Schroeder	5	100	50 00
A Caselli	6	100	50 00
J Landsmann	13	100	50 00
C Martin	7	50	25 00
G Mahe	8	50	25 00
W H Hagermann	9	50	25 00
J C Yunge	10	50	25 00
G F Sharp	12	50	25 00
S Mayer	11	50	25 00
H Dreschfeld	14	145	72 50
L Rosenbaum	43	50	25 00
L Adler	47	5	2 50
C Wennerholz	20	10	5 00
W A Ilse	42	33	16 50

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction by J. Middleton & Son, at their salesroom, 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary
Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

La Blanca Gold and Silver Mining Company.—Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of November, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Sompenberg, L B	19 222	12	$12 00
Schleicher, Jacob	84	15	15 00
Schleicher, Jacob	105	5	5 00
Schleicher, Jacob	159	5	5 00
Schleicher, Jacob	208	5	5 00
Schleicher, Jacob	372	5	5 00
Schleicher, Jacob	389	11	11 00
Wertheimer, E	227	10	10 00
Hildebrandt, G W	222	10	10 00
Hildebrandt, G W	238	10	10 00
Hildebrandt, G W	244	10	10 00
Hildebrandt, G W	262	10	10 00
Hildebrandt, G W	347	8	8 00
Hildebrandt, G W	368	2	2 00
Hildebrandt, G W	435	2	2 00
Hartmann, Charles	136 328	12	12 00
Klivesahl, E W	148	5	5 01
Klivesahl, E W	269	5	5 00
Klivesahl, E W	380	1	1 00
Klivesahl, E W	389	5	5 00
Klivesahl, E W	397	5	5 00
Klivesahl, E W	400	3	3 00
Trenkle, E	456	6	6 00
Dieffenbacher, Eliza	533	6	6 00
Thyes, Adelphine	534	10	10 00
Thyes, Hermann	535	109	109 00
Mayrisch, Marie	366	1	1 00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of November, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Tuesday, the twenty-first day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOSEPH GOLDMAN, Secretary.
Office, No. 312 Front street, San Francisco, Cal. dec4

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J L Schroeder	5	40	$20 00
A Caselli	6	40	20 00
J Bandmann	7	40	20 00
C Martin	8	20	10 00
G Mahe	9	20	10 00
W H Hagermann	10	20	10 00
J C Yunge	11	20	10 00
S Mayer	14	20	10 00
H Dreschfeld	15	60	30 00
L Rosenbaum	47	20	10 00
G F Sharp	12	20	10 00
H Dreschfeld	49	5	2 50
W H Sharp	3	40	20 00

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

Taylor Mill and Mining Company.—Notice.—The Annual Meeting of the Stockholders of the Taylor Mill and Mining Company, for the purpose of electing five (5) Trustees to serve for the ensuing year, will be held at the office of the Company, No. 529 Montgomery street, San Francisco, on MONDAY, the thirteenth day of December, 1869, at four o'clock P. M.

SAM'L S. MURPEY, Secretary.
San Francisco, November 16th, 1869.

Pocahontas Gold Mining Company.—Location of Works: Mud Springs, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of November, 1869, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 419 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twelfth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.
Office, 419 California street, San Francisco, Cal. no20

Pilot Mining Company—Location of Works: White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of November, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room No. 7, 423 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the third day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighteenth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. M HARRON, Secretary.
Office, Room No. 7, 423 California street, San Francisco, Calfiornia. no27

Silver Star Consolidated Silver Mining Company, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1869, an assessment of fifteen (15) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the seventeenth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. no13

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of November, A. D. 1869, an assessment of thirty cents per share was levied upon each and every share of the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No 529 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the tenth day of January, 1870, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

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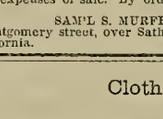

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To Advertisers.

After January 1st, 1870, the latest hour for receiving mining and other advertisements for the M. AND S. PRESS will be during Thursday evening, as our paper will be printed for the interior mails on Friday morning.

[SPECIAL NOTICE.]

Winn's Patent Shampooing Apparatus

By the nso of the apparatus here shown, the unpleasant mode in which the operation of shampooing is nsnally performed, is converted into a neat and tidy process, very effective and decidedly agreeable. By the aid of this apparatus, the head is washed and scrubbed in a bath of water, of any desirable quantity or temperature, and the employment of which, upon the top of the head, is productive of the most delightfully agreeable sensations, such as impart an entirely new feature to the process of shampooing. The apparatus is tasteful as well as substantial in its construction; and its nse is equally as effective when applied to the long, flowing hair, as worn by the ladies, as to the shorter hair of gentlemen's wear.

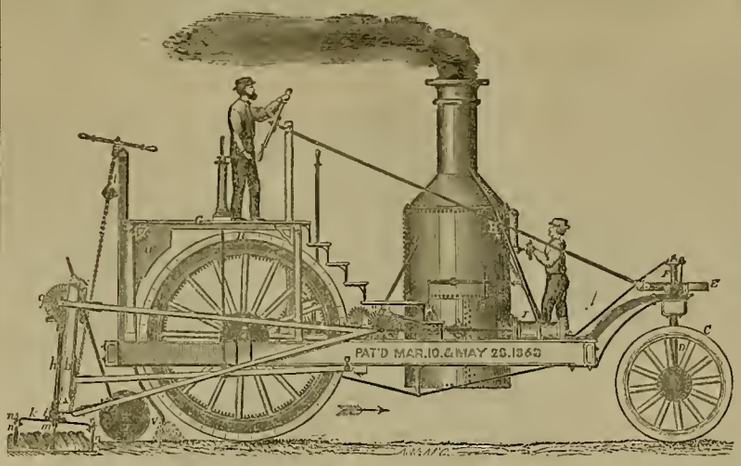
To form this apparatus, a rim or bottomless pan is first constructed, with a gutta percha lining so devised and provided with an elastic strap, as to fit tightly around the head, below the principal part of the hair. The drapery or curtain, which is seen to fall below the rim, is both for ornament and use; it serves to conceal from view the somewhat unsightly straps, lining, etc., which form the water-tight joint between

the head and apparatus thereto applied, and a subsequent elastic gutter, which is strapped tightly about the head, at the extreme lower part of the hair, to catch any water which may possibly escape from the main apparatus. As seen in the engraving, each has a flexible tube appended, by which the water may be carried off to a sink or other suitable receiving vessel, so that the person will have no occasion to leave his seat during the entire operation, or even to remove his neck-tie.

The soap-suds or any other shampooing fluid which may be employed, is poured upon the top of the head, within the rim, after it has been properly adjusted, and a brush or mop, or sponge, or any other suitable instrument, is then employed within the body of the liquid to clean the head and hair. The liquid is readily discharged through a stop-cock and the tube shown in the rear, and fresh water for rinsing applied, as often as may be desirable. Standards, with curved rests or supports, placed upon the shoulders, and adjusted by screws upon the top, all shown in the engraving, are affixed for the purpose of taking the weight of the apparatus and a portion of the weight of the water from the head. The flexible rim which adjusts the apparatus to the head makes this device practicable.

Previous to putting on the rim an elastic strap is placed around the head to hold up the hair intended to be included within the rim, when it may be properly washed and cleansed. This arrangement is particularly useful and indispensable in fact, in shampooing the head of a lady with flowing hair. This combined apparatus renders the process of shampooing as easily and as readily performed for a lady as for a gentleman. Mr. M. L. Winn, of this city, the inventor and patentee, exhibited his apparatus and the practical employment of the process, in the Mechanics' Fair, and will soon open a saloon in this city. The patent was obtained by the M. & S. PRESS PATENT AGENCY.

The Standish Patent California Steam Plow.



Capacity, from FIFTEEN to THIRTY Acres per day. The success of this invention for plowing large fields, is established beyond a doubt. Individuals, clubs, or companies desiring a more rapid and economical means of cultivating their farms, are invited to call upon the inventor, PHILANDER H. STANDISH, or address him by mail, Box 17, San Francisco. Single Machines for sale. Also, State rights, and patents for England, France, and Russia.

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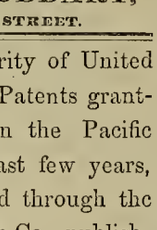

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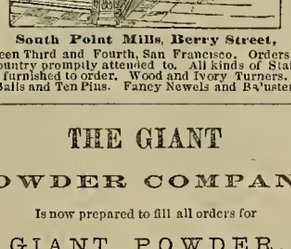

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21v18-1y

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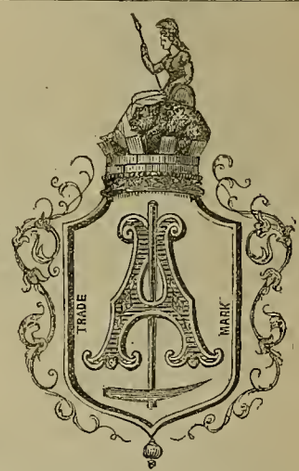

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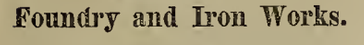
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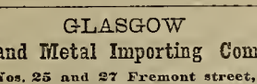
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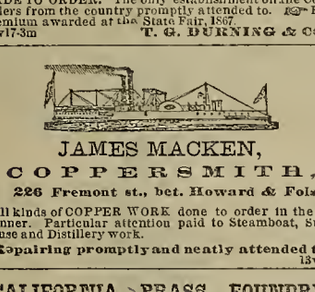

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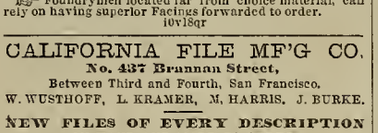
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Heater, Condenser and Filter, Combined.
BOILERS, HIGH AND LOW PRESSURE,
Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Paton's, and Belding's Amalgamating Pans and Settlers; Hendy's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Hendy, Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.
We would call particular attention to our
SCOTT & ECKART CUT-OFF ENGINE.
As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Off at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:
"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 30-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the travel of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 50 or 60 horse power with ease and economy. Awarded silver medal. Wm. Burnett, Monty Fletcher, John Myers."
Pickering Governors, Machinists' Lathes,
Planers, Shapers, Drills, Etc.
On hand and for sale, Drawings furnished free of cost. Orders promptly attended to. A complete stock of fittings on hand.
☞ We are prepared to furnish all kinds of Machinery at short notice, as our facilities are unequalled on the Pacific Coast.
H. J. BOOTH & CO.

McAFEE, SPIERS & CO.,
BOILER MAKERS
AND GENERAL MACHINISTS,
Howard st, between Fremont and Beale, San Francisco.
Flue or Tubular Boilers, with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.
Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, height of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.
Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.
To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.
Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.
To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

HUGH H. LAMONT. WM. CALDWELL.
CYCLOPS MACHINE WORKS,
Construct and Repair every description of
Stationary and Marine Engines, Mill and Mining Machinery.
Special attention given to Repairing Machinery.
ap17-3m 113 Beale street, near Mission, S. F.

THOMPSON BROTHERS,
EUREKA FOUNDRY,
129 and 131 Beale street, between Mission and Howard San Francisco.
LIGHT AND HEAVY CASTINGS,
of every description, manufactured 24v16qr

EYE AND EAR
DISEASES.
DR. ABORN'S
CONSULTING AND OPERATING APARTMENTS,
NO KEARNY STREET,
Are most modern and scientific treatment of the sees of the EYE, EAR, HEAD, THROAT and LUNGS.
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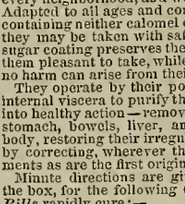
HAYWARD & COLEMAN
IMPORTERS AND REFINERS
—OF—
Illuminating, Lubricating,
—AND—
PAINT OILS,
CONSISTING OF
KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.
—ALSO—
Spirits of Turpentine and Alcohol.
Lamps and Lamp Stock!
An elegant and complete assortment.
SOLE IMPORTERS OF
Devoe's Illuminating Oil
PATENT CANS,
5v17-tf 414 Front street, San Francisco.

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
☞ [See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19-6m

Ayer's Cathartic Pills,
For all the purposes of a Laxative Medicine.


Perhaps no one medicine is so universally required by everybody as a cathartic, nor was ever any before so universally adopted into use, in every country and among all classes, as this mild but efficient purgative *Pill*. The obvious reason is, that it is a more reliable and far more effectual remedy than any other. Those who have tried it, know that it cured them; those who have not, know that it cures their neighbors and friends, and all know that what it does once it does always—that it never fails through any fault or neglect of its composition. We have thousands upon thousands of certificates of their remarkable cures of the following complaints, but such cures are known in every neighborhood, and we need not publish them. Adapted to all ages and conditions in all climates; containing neither calomel or any deleterious drug, they may be taken with safety by anybody. Their sugar coating preserves them ever fresh and makes them pleasant to take, while being purely vegetable no harm can arise from their use in any quantity.
They operate by their powerful influence on the internal viscera to purify the blood and stimulate it into healthy action—remove the obstructions of the stomach, bowels, liver, and other organs of the body, restoring their irregular action to health, and by correcting, wherever they exist, such derangements as are the first origin of disease.
Minute directions are given in the wrapper on the box, for the following complaints, which these *Pills* rapidly cure:—
For **Dyspepsia** or **Indigestion, Listlessness, Languor** and **Loss of Appetite**, they should be taken moderately to stimulate the stomach and restore its healthy tone and action.
For **Liver Complaint** and its various symptoms, **Bilious Headache, Sick Headache, Jaundice** or **Green Sickness, Bilious Colic** and **Bilious Fevers**, they should be judiciously taken for each case, to correct the diseased action or remove the obstructions which cause it.
For **Dysentery** or **Diarrhœa**, but one mild dose is generally required.
For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins**, they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.
For **Dropsy** and **Dropsical Swellings** they should be taken in large and frequent doses to produce the effect of a drastic purge.
For **Suppression** a large dose should be taken as it produces the desired effect by sympathy.
As a *Dinner Pill*, take one or two *Pills* to promote digestion and relieve the stomach.
An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.
DR. J. C. AYER & CO., Practical Chemists, LOWELL, MASS., U. S. A.
Sold by all druggists and dealers in medicine everywhere. Orane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18-owim

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

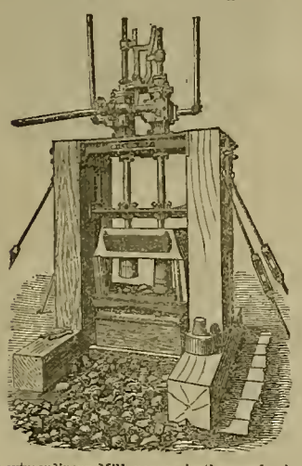
FRIDAY, December 10, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 60c ₱ 100 lbs; Bar, 1@1¼c ₱ lb; Sheet, polished, 3c ₱ lb; common 1½@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1½c ₱ lb; Galvanized, 2½c ₱ lb.

Scotch and English Pig Iron ₱ ton.....$29 00 @ 30 00
White Pig ₱ ton..... 27 50 @ 28 00
Refined Bar, bad assortment ₱ lb..... — 03 @ — —
Refined Bar, good assortment, ₱ lb..... — 04 @ — —
Boiler, No. 1 to 4..... — 04½@ — —
Plate, No. 5 to 9..... — — @ — 04¾
Sheet, No. 10 to 13..... — 04¾@ — 5
Sheet, No. 14 to 20..... — 05 @ — 5¾
Sheet, No. 24 to 27..... — 05 @ — 6¾
COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb
Sheathing, ₱ lb..... — — @ — 26
Sheathing, Yellow..... — 20 @ — 21
Sheathing, Old Yellow..... — 10 @ — 11
Composition Nails..... — 21 @ — 22
Composition Bolts..... — 21 @ — 22
TIN PLATES.—Duty: 25 ₱ cent. ad valorem.
Plates, Charcoal, IX, ₱ box..... 12 00 @ — —
Plates, I C Charcoal..... 10 00 @ 10 50
Roofing Plates..... 10 00 @ 10 50
Banca Tin, Slabs, ₱ lb..... — 40 @ — 4¼
STEEL.—English Cast Steel, ₱ lb..... — — @ — 15
QUICKSILVER.—₱ lb..... — 55 @ — 60
LEAD.—Pig ₱ lb..... — 7½@ — 8
Sheet..... — 10 @ — —
Pipe..... — 11 @ — —
Bar..... — 9 @ — 9
ZINC.—Sheets, ₱ lb..... — 10½@ — 11
BORAX.—California, ₱ lb..... — 38 @ — 40

Machinery.

THE WILSON
Patent Steam Stamp Mill.



This extraordinary Mill, now so justly popular in the East, is now offered to the miners of the Pacific Coast. Having been in operation now for about eighteen months, the Company feel confident that the

WILSON STEAM STAMP MILL,

For Durability, Efficiency,

AND ECONOMY OF WORKING,

HAS NO EQUAL.

The Wilson Steam Stamp Mill is the only Steam Mill that has had the severe ordeal of practical working, and proved itself eminently successful. It is now in operation in several of the Eastern States and Territories, and gaining an envious popularity. The whole machine is so simple as to be readily understood by the most ordinary minds. In fact, its simplicity is its durability. The expense of crushing rock or cement with this Mill is less than one-half the expense of any other Stamp Mill, and less than one-half the cost. For further particulars inquire of

A. BICKNELL, Agent,
Nevada City, California,

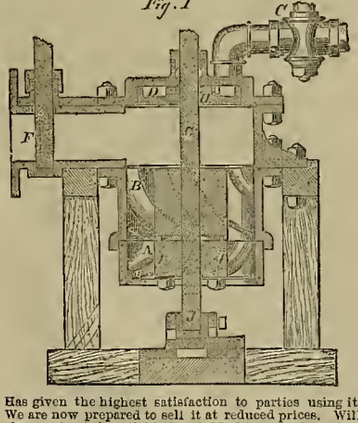
Or of THE WILSON STEAM STAMP MILL CO., 326 Walnut street, Philadelphia, Pa.

NOTICE.—All persons are hereby warned not to manufacture or use any Steam Stamp Mills that are an infringement on the Wilson Patents, as they will be prosecuted to the utmost rigor of the law.

F. B. WILSON,
20v19-tf Supt. W. P. S. S. M. Co., Philadelphia.

Lind's Improved Water Wheel

Fig. 1



Has given the highest satisfaction to parties using it. We are now prepared to sell it at reduced prices. Will also contract for all kinds of Machinery—Flour, Saw and Quartz Mill. All our work guaranteed. We will send competent men to put up our Wheels and Machinery. We contract for or do it ourselves. Our extensive acquaintance with millwrights on this coast enables us to furnish millmen with the best of workmen at short notice. Drawings for contracts furnished gratis. Send for circular.

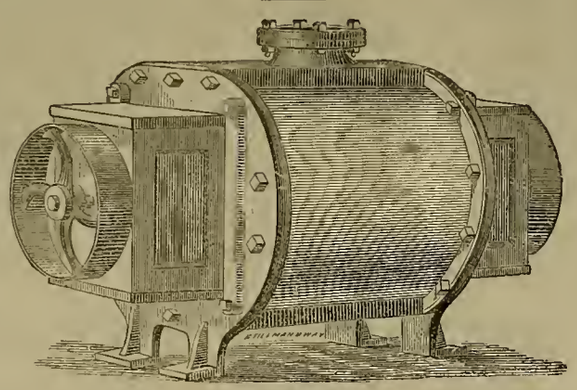
A. LIND, Millwright,
Pacific Iron Works, San Francisco.
Refer to John Sims and J. Haley. 19v19

ROOT'S PATENT FORCE BLAST ROTARY BLOWER

MANUFACTURED BY KEEP & BARGION,

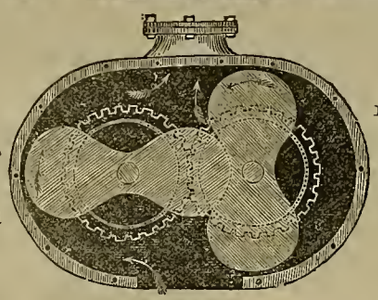
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 31, 1866; and Oct. 6, 1868.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER **Than any Blower** Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

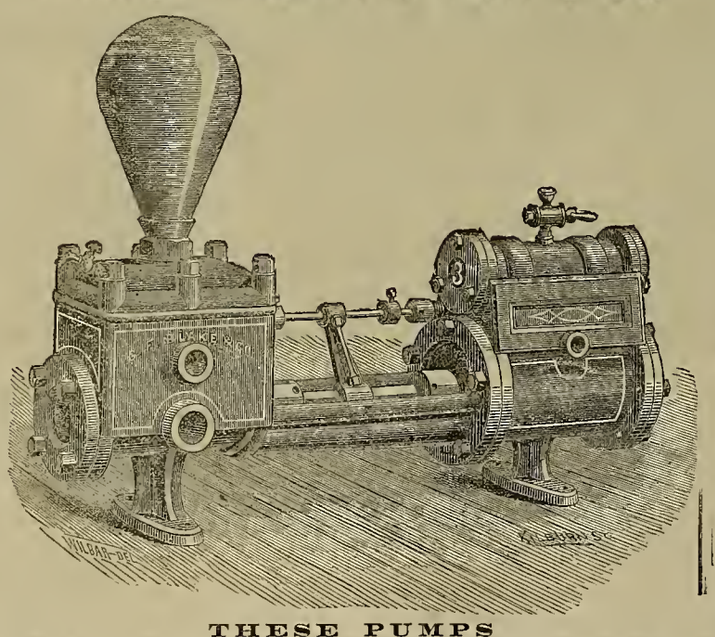
CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,
4v16-3m **Globe Iron Works, Stockton, Cal.**

BLAKE'S PATENT STEAM PUMP.



THESE PUMPS

Have been tested, and found to be indisputably without an equal wherever tried. They are constructed in the most simple style, and built in the most thorough manner—specially calculated for SIMPLICITY, DURABILITY and POWER.

Some of the advantages of the Blake Pump may be summed up as follows:

IT IS POSITIVE UNDER ANY PRESSURE. *May be run as slow or fast as may be desired.* Will discharge more water than any others of the same dimensions. Has no leaky joints, the steam part being cast in one entire piece. The steam valve is perfectly balanced, is cushioned at each end, and slides with the greatest facility. Will start at ANY point of the stroke, and will discharge all the water of condensation.

The Pump has no crank or fly-wheel, thereby saving a considerable item of expense to the purchaser. Having NO DEAD POINTS, it therefore needs no watching, and is consequently ready to start without using a starting bar or any hand work whatever.

The Blake Pump is extensively used

On Railroads and Steamboats; in Hotels; for Mining and Fire Purposes;

IN BREWERIES, TANNERIES, SUGAR HOUSES, FACTORIES, MILLS, LAUNDRIES,

And as BOILER FEEDERS, wherever steam is employed. In fact, wherever water or other liquids are desired to be raised in large or small quantities, or against heavy or light pressure, it is the

Cheapest and Best Pump that Can be Used.

It is offered to the public as the most perfect independent Steam Pump ever invented. TWELVE DIFFERENT SIZES are made, capable of throwing from 1,000 to 180,000 gallons an hour, and adapted to any class of work that might be required. For sale by

BERRY & PLACE,
112 and 114 California Street, San Francisco.

☞Every pump will be warranted to perform the work required of it by the purchaser, or it may be returned and the money will be cheerfully refunded, 17v19

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

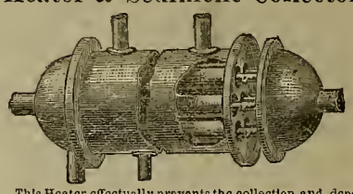
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont street,

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,
16v18-3m Patentee, Sacramento, Cal.

SPECIAL NOTICE.

TO DEALERS AND CONSUMERS

—OF THE—

H & L
AXLE GREASE.

Having received your liberal patronage and support during the last fifteen years, and desiring to further extend its consumption, and if possible meet the market of our Chicago friends, we have made a great reduction in prices, and from our long experience we will satisfy you that there is none BETTER, and through your liberal patronage that there is none CHEAPER.

HUCKS & LAMBERT,
144 Natoma Street,

Depot, 320 Jackson Street.

N. B.—We are prepared to furnish Bulk, Packages to contractors on equally liberal terms.

WONDERFUL
Scientific Discovery.
THE GREATEST EVER MADE,

Having Baffled the Ingenuity of Chemists and Physiologists for Ages Past.

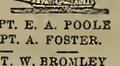
DR. CROWLY'S EMERALD HAIR BALM.

NO EXAGGERATION, but a stern reality, verified by the undersigned:

Dear Doctor:—I feel much pleasure to inform you that your "Emerald Hair Balm" has caused the growth of hair on my head—having only used one of your bottles, although I had been bald for twenty-five years. You are quite at liberty to use this intimation as you please. Yours truly, JOHN STAPLETON,
California street, San Francisco.

To W. J. Crowly, M. D., No. 20 Montgomery street, San Francisco. 28v19-3m

California Steam Navigation COMPANY.



Steamer CAPITAL..... CAPT. E. A. POOLE
" CHRYSOPOLIS..... CAPT. A. FOSTER.
" YOSEMITE.....
" CORNELIA..... CAPT. W. BROMLEY
" JULIA..... CAPT. E. CONCKLIN.

Two of the above steamers leave BROADWAY WHARF at 4 o'clock P. M. EVERY DAY (Sundays excepted), one for Sacramento and one for Stockton, those for Sacramento connecting with light-draft steamers for Marysville Colusa, Chico, and Red Bluff.

Office of the Company, northeast corner of Front and Jackson streets.

B. M. HARTSHORNE,
13v12 President.

Notice to Miners,
Well-Borers and Water Companies.

M. PRAG IS NOW PREPARED TO MANUFACTURE Hydraulic and Artesian Well Pipes in the best workmanlike manner, and at the lowest market rates. Having made large additions to my stock of machinery for that branch of business, I am prepared to fill all orders with dispatch, and guarantee entire satisfaction. I also manufacture Mississippi Stoves, of the latest improved patterns, for vessels of all classes. Also, Ship Plumbing done.

M. PRAG,
8v13 ly Stove Store, No. 1 Clay Street, below Davis.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINGS BANK, California street, one door from Sansome.

THOMAS MOONEY, President.

August 2, 1869. 6v19-1m

Mining and Scientific Press.

PUBLISHED EVERY SATURDAY,

At No. 414 Clay Street, San Francisco.

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It contains hints and information enough to repay the subscription price many times in a single month.

Its columns are filled with instructive reading in plain, comprehensible and attractive form to minds of ordinary intelligence.

It contains 16 pages and 64 columns of the size of Harper's Weekly, and is the best printed and most valuable paper on the western half of the continent. All new patents issued to inventors on this coast are reported. Illustrations of new machinery are given each week. Descriptions of new inventions and discoveies, throughout the world, are given, with fresh and comprehensive information of scientific developments and mechanical and industrial progress, which cannot be obtained from books, or readily found gathered in so convenient a form elsewhere. Subscribe now, and you will not regret it. Price $5 per annum.

DEWEY & CO.,
U. S. and Foreign Patent Agents.

L O S T.

Two shares Stock MECHANICS' MILL AND MANUFACTURING CO., No, 25; paid February 3, 1868. The finder will be suitably rewarded by leaving them with the owner, T. HANDSBURG,
23v19-3m Office Mechanies' M. & M. Co.

WANTED.

A situation in a Quartz Mill to do Millwright and Carpenter work. Address, B. C. B., Fisherman's Bay, Sonoma County.

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by the Year, Month or Number

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Established for the Manufacture of
RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,
Embracing ALL SIZES of
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames
—ALSO—
HAMMERED IRON
Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention.
☞ The highest price paid for Scrap Iron 9v143m9p

Woodworth Planers,

PLANERS AND MATCHERS.

With patent expansion, feed gear and other improvements made at Worcester, Mass., in the most finished and substantial manner; also every description of Richardson Meriam & Co's, Smith's and Wood's celebrated

Wood Working Machinery.

Embracing Mortising, Sash and Moulding, Smith's Stickers, Slat and Door Tenoning, Boring, Shaping, Scroll Sawing, Planing, Rod and Dowell making and Re-sawing Machines, Wood and Engine Lathes, etc., for sale at Eastern prices, at the Machinery Depot of
BERRY & PLACE,
112 and 114 California st., San Francisco.
☞ Agents for Blake's Patent Steam Pump, (warranted the best in the market); Davis & Furber's Woolen Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustrated Catalogues sent free.

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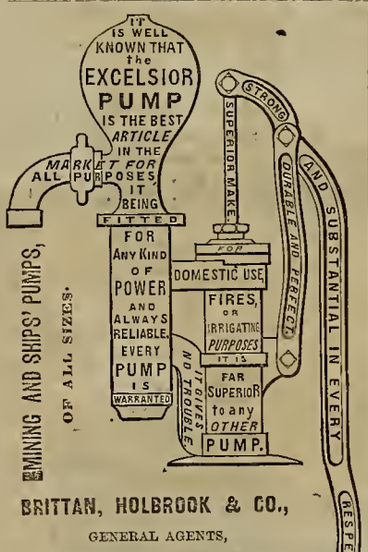
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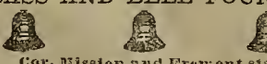

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SAN FRANCISCO, SATURDAY, DECEMBER 18, 1869.

VOLUME XIX. Number 25.

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The San Francisco Glass Works.

These works, which were erected and conducted under the charge of Mr. C. Neuman, until they were destroyed by fire a little over a year ago, are now about to be rebuilt upon a new site, and under better auspices than were the original works. The old furnace stack and vaults have already been taken down, and whatever was useful of the *debris* left by the conflagration has been gathered together preparatory to removal to the corner of Sixth Avenue and K-streets, near the western end of the second long bridge, in South San Francisco. It is expected that the new works will be ready for starting about the 1st of March.

In the construction of the furnaces all the latest improvements for economy in the use of fuel and other important advantages will be introduced.

The manufacture includes flint and green and black glassware, wine bottles, soda bottles, mustards, druggists' vials, patent medicine bottles, etc.

Large quantities of glassware are used on this coast, and at present most of it is imported. Of all imported articles glass is the most difficult to ship safely, and the loss by breakage is always large. The importation of this ware, when both factories were in operation, was materially reduced, and it is expected that the new works will be of capacity to turn out all that may be ordinarily demanded in this market.

The new works will also be under the management of Mr. Neuman, who is the pioneer and most successful glass manufacturer on the Pacific coast. Some forty or fifty hands will be employed at the start, which number will be gradually increased as the state of the market and success of the enterprise may warrant. Mr. Neuman, it will be recollected, was the recipient of the gold medal at the Fair of the Mechanics' Institute in 1868, and, if we mistake not, he also received a special gold medal from the State Fair at Sacramento for 1867.

MR. W. H. WEBB, of New York, most extensively known as a large ship-builder, and for his connection with almost every steamboat enterprise between the Atlantic and the Pacific coasts, has arrived in this city.

Small's Improved Wood Planer.

Most people agree that the fostering of home manufactures is advisable even if the buyer is subjected thereby to a small sacrifice. At least most agree theoretically, although not always in practice; and it is not difficult to see how the advantage becomes mutual—if not at the present hour, still not many days off.

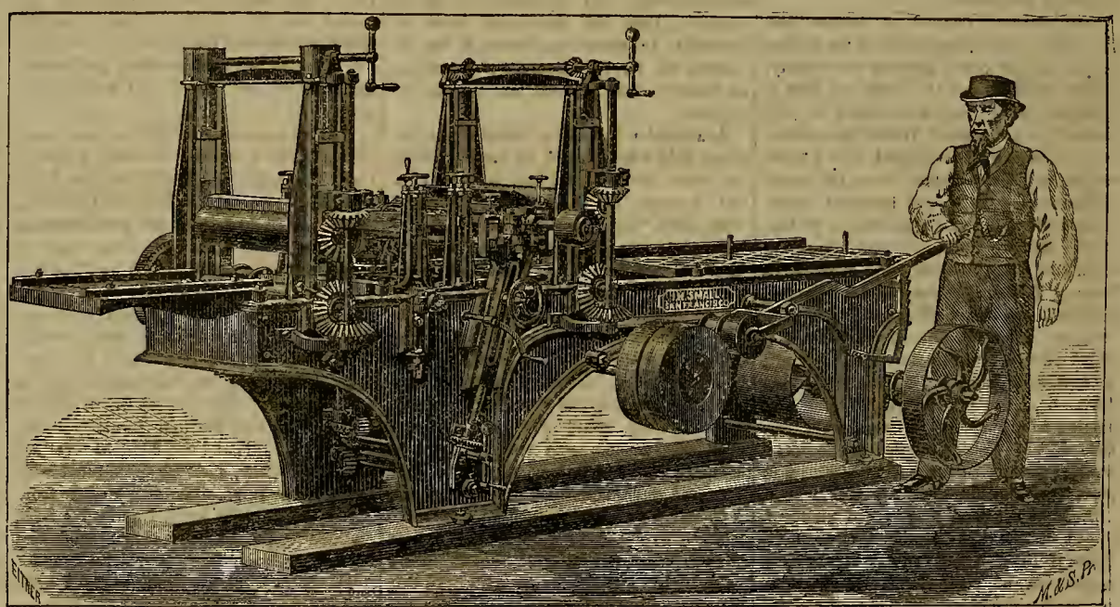
In the way of machinery, the East has long controlled this market. But even in this branch California is making strong headway, although laboring under many temporary disadvantages. As an example of the inventive genius and progressive spirit of our coast, we give this week an engraving of a planing machine made in our city, which has received several decided improvements from an "old Californian." The machine has been in use some time, and it is claimed that several of its modifications have been adopted as far as possible in other planers.

One of the most important of these modifications is the greater expansion of the rolls. By a simple construction, easily understood from the engraving, these can be expanded ten inches, or even more, if necessary; while in other machines six inches, we believe, has been the limit. The use of wrought iron four-sided slotted heads, too, is a very great improvement over the old cast iron heads. There is not so much liability to breakage, and the machine can therefore be run much faster. Moreover, if a bolt is broken, instead of boring and drilling half a day to repair the damage, we need only to slip it out through the slot; to do which requires only a couple of minutes.

The top cutterhead runs up at an angle, instead of perpendicularly; and thus can be raised or lowered any necessary distance without changing the tension of the belt.

The use of a binder pulley on the feed belt prevents the sudden jerking and jarring in starting up, which is so injurious to the gears and other parts.

The bottom box, which holds the upright or tongue and groove shaft, slides up and down by means of a pinion; and in this way the side heads may be dropped. This enables us to use the machine for cutting out mouldings, or for planing lumber from one-fourth inch to ten inches in thickness and from one to twenty-four inches in width.



SMALL'S IMPROVED WOOD PLANER.

The merits of the planer are so obvious that already in a short time quite a large number have been ordered from and sent to various places in this State and in Nevada. They are used by some nine or ten different firms in this city. The one from which the annexed cut was made is now used by Burket & Metcalf, at San José. Such a machine weighs about 7,000 pounds, and costs about $1,200. The prices vary from $400 to $1,700, according to size and quality.

Mr. Small makes the manufacturing and repairing of wood-working machinery a specialty, and seems to be meeting with merited success. There are always advantages to be gained by the purchase of home-made machinery. It is generally better adapted to local work, and contains the best quality of stock. In case of breakage of any of its parts, it can be more quickly and cheaply repaired.

For further particulars address I. H. Small, corner of Market and Beale streets, San Francisco.

SAMPLES of oranges raised in Marysville have been sent East.

RAILROAD PRINTING.—Persons who have noticed the "imprint" on the fancy colored handbills of Eastern railroads, lately posted in the principal cities and towns on this coast, are already aware that Buffalo and Chicago are the places where offices make that class of printing a specialty, and have developed decided skill in the production of novel letters and combinations of colors in the "black art" that proves not so black after all. The railroad printing on this coast seems to center at the office of H. S. Crocker & Co., Nos. 42 and 44 J street, Sacramento. They have just received two (pioneer) presses, especially adapted to fast printing and numbering of tickets (from No. 1 up to thousands) at one operation. The largest press will print, number, and "perforate" a string of coupons some half a yard long, working rapidly, and with seemingly human arithmetical precision. These presses are Hoe's American manufacture, and it is probable there are yet less than a dozen of them in use of the larger variety. Crocker & Co. do a large variety of book and job printing, and possess one of the leading offices in the State.

TRAPPING IN NEVADA.—All along the Humboldt river and its tributaries there exists a fine field for trapping during the winter months. Beaver and muskrat inhabit the different streams above and below Elko in swarms, and can be readily trapped, the skins easily sent to the railroad, where they may either be disposed of at fair rates or sent to the Chicago or San Francisco market.

A FISH-HOOK MACHINE.—There is a machine at New Haven, Conn., which turns out one hundred fish-hooks per minute from a coil of wire.

Communications.

Sketches of El Dorado County.

[Written for the Mining and Scientific Press.]

Editors Press:—El Dorado county being the place where gold was first discovered in quantities to justify mining for it ae a special husiness, after the acquisition of California by the United States, and also one of the pioneer mining counties in growing fruit and wine, a few items in regard to her past and present coudition may be of interest to some of the numerous readers of the Press.

A large portion of the overland emigration of 1849 and '50 enterod California hy the Hope Valley route, which leads directly to this point. Many remained during the winter succeeding their arrival, and commenced their mining operations at or near this town. Some of these are now among the prominent judges, lawyers and merchants of your city, and other large towns of the State. At that time, the place was known hy the appellation of "Hangtown," having received that name on account of snmmary punishment inflicted on three deperadoes in August, 1849, by the miners (Judge Lynch presiding), who attached the trio to a limb of a large oak tree near the center of the town, and there let them remain until they ceased trouhling. The execution of Irish Dick, here, in September, 1850, and two persons taken from the County Jail at Coloma, in 1852, hy the populace, ended the careor of Judge Lynch in thie connty.

The discovery of gold at Coloma (Sutter's Mill) in 1848, was followed by similar discoveries in other parts of the connty, one of which was on the rocks or falle of a stream about oue mile south of this place, hy a man named Weber, the stream or creek taking his name, and also a town, which was located just above the rocks spoken of, having several hundred inhahitants from 1849 to 1854, known as Weberville. But two buildings now remain to mark the spot of that once flourishing bnrg. Weherville contrihuted towards the huilding up of Ringgold, Diamond Springs, Coon Hollow and Placerville, either of which were not over a mile and a half dietant from it. Ringgold is long defunct. Diamond Springs, on the road leading from this city to Sacramento, one mile west of Weberville, had at one time a voting population of more than 900,—now polls less than 150 votes.

Some of the finest grapes and wine produced in the State are in this vicinity. Coon Hollow, which at one time had a population of some 1,500, has hut three or four huildings left, the site of the old town having been washed away by the powerful hydraulic pipe. The Coon Hollow ridge is a spur from what is known as the Hangtown Hill. This hill begins jnst below this city, on the south bank of Hangtown creek, rising to the height of 300 feet or more, swinging around towards the east in a half circle, in which the principal part of the city is located, running east for a number of miles, and dividiog the waters that flow into Hangtown creek from those that fall into Woher Creek on the south.

This hill or ridge for several miles oontains a layer of hlue cement or gravel, several feet in thickness, above the bed-rock, which is more or less intermixed with hoth coarse and fine gold. I saw a solid chunk of eight ounces taken from one claim last year. After the first washing in long sluices, this gravel is run through stamp mills, and the remainder of the gold taken out. Many emall fortunes have been made in these gravel claims, and the possessor has taken hie departure for your city, or some more encouraging place than the mines, to invest his hard-earned money. There are hydraulic claims, quartz mills, a numher of cement mills, tunnel claims, and some few placer and creek claims, which I will endeavor to post you on in future. E. N. S.

Placerville, Dec. 13, 1869.

Mining Mismanagement.

[Written for the Mining and Scientific Press.]

Editors Press:—In addition to the causes that have operated prejudicially to the euccess of mining enterprises in this State, discussed in a former communication to the Press, entitled "Mining *vs.* Stock Johbing," is that of mismanagement uninfluenced hy the nocessities of stock johbers, or other impelling causes aside from sheer incompetency, to use no harsher term, nntil the facts are made patent npon which a different opinion may be fairly predicated. And whether those facts exist, can hest be shown by a brief outline of the management of various mines, particularly in Central Nevada, that have been fostered hy capital from abroad.

Early in 1864, when mining in this State had become a paralyzed industry, with the exception of a few instances in the Comstock, where the wealth of ore was so great and so easily extracted as to successfully withstand the odor of dead "wild cats" and a collapsed stock board, it became ohvious to those interested in the undeveloped and nnworkcd lodes of this section, that capital must be sought in a new direction. Many sales of mining property were readily effected at New York and other Eastern money centers. But not, however, without a spice of the old hreed of Washoe wild cats. The amount of money expended by Eastern companies upon mines in the counties of Nye and Lander duriug the past five years, wonld he difficult to eetimate correctly, aud is immaterial to the question, How has the money been expended? In answering which, a few instances will amply suffice, affording clearly an illustration of the rnle, and not the exception.

At a point a few miles dietant from this place, title was acquired, on most reasonahlo terms, to one of the hest lodes in Central Nevada,—as the sequel will ehow. Very little "dead work" was required—high-grade ores being stoped from the surface. A 20-stamp mill was erected and kept running for a little more than two years; yielding in bullion, as per company's statement, upward of $1,100,000; at the end of which time the company went into insolvency, notwithstanding the entire outlay on mill and mino, with reasonahle economy, could not have exceeded $600,000. In the same vicinity, another company hegan operations about the same time, and under equally favorable auspices. A 30-stamp mill was erected, and the mine partially explored to a depth of 180 feet, at an expense exceeding $1,350,000, as appears by the company's statoment. In this instanee, $500,000 judiciously expended wonld cover the entire outlay.

The managers of another company—the theater of whose operations is almost in view from this place—on their arrival found that the lodes that had been purohased were utterly worthless. Neverthcless, they proceeded to erect a well-appointed 20-stamp mill, and then, for the avowed purpose of obtaining a snpply of ore, in face of the testimony of experienced mining engineers and every practical miner in the district, purchased at a princely price another wild cat. It is hardly necessary to say that the oompany failed. Two or three years ago, there could he seen on Lander Hill, hoisting works costing from ten to twenty-five thousand dollars each, erected, preparatory to any work of exploration, on single lodes a few inches in width, and with a power sufficient to hoist out the entire lode to a depth of a hundred feet at a single draft, where one man with an ordinary windlass was amply sufficient for all present requirements. And numerous companies could be seen actively engaged in the work of development, with a pay roll for "hosses" that exceeded by 100 per cent, that for the workmen employed.

The instances cited are prominent, but exceptional, and, as before said, afford a clear illnstration of the rule. Exceptions are so rare that your correspondent would find it difficult to point to more than one in this connty if required.

Now, both hiters and hitten, managers and stockholders, though obviously from different motives, join in pronouncing mining a failure. Yes, this kind of mining has proved a very great failure, and would be ruinous to every honost stockholder, even if the managers were permitted to drive their levels iuto the vaults of the Bank of England.

If the evils resnlting from this shameful mismanagemeut were confined to the pecuniary losses of stockholders, the consequence would be, comparatively, of little importance. But such is not the case. It has the effect to thwart, hinder and discourage all mining enterprise, whether legitimate or not; to depreciate property of well-ascertained worth, and to hold back indefinitely the essential work of development. Icon.

Ellsworth, Nev., Nov. 23, 1869.

The Eureka Mine, Grass Valley.

[Written for the Mining and Scientific Press.]

Editors Press:—I have had it in contemplation for some time to inspect this wonderfully rich mino. Accordingly, I came to this place a few days since, aud met the foreman, Mr. Gluyas, to whom I made known my husiuess. In a few minutes we were geutly gliding dowu the main shaft, the pumping gear heing in such excellent order that ecarcely a sound conld he heard, so smoothly was the water hrought to the surface from a depth of 530 feet. This shaft has recently been repaired, aud great credit is due to the officers and workmen for the miner-like manner in which the work has heen performed. The timbers are strong, and well put together.

We first iuspected the 300-foot level east. The lode there is from two and a half to three feet wide—a splendid looking lode, standing for several hundred feet in length, and at this point is suppoced to be running to surface. The lode west of the shaft is somewhat larger, averaging from three and a half to four and a half feet wide. After thoroughly examining this level, we began our descent to the 400-foot level, passing through the scveral stopes now in operation. This level has heen driven eaet to within twenty-eight feet of the boundary line, aud most of the lode formerly standing between this aud the 300-foot level has heen taken away, and the space filled with waste dirt. In passing down a winze from this to the 500-foot level, I noticed a large and fine-looking lode standing in each end of said winze, and very productive for gold. This level has heen extended both east and west of the shaft; hut the dietance driven is not far; consequently not much stoping has been done in the hack of said level. I did not see the lode at the hottom of the shaft. The foreman told me it was about two feet wide, and a very good one. The shaft is in course of sinking under the 500-foot level.

The lode throughout the mine appears to he of a uniform character, both in size and quality, and so well managed that it cannot fail to pay for years to come. Should the 500-foot level he driven to the houndary lines, there would be within said lines, at the least calculation, 64,000 tone of available rock. This, at a produce of $18 per ton, would give $1,152,000. Well may the Eureka be called a rich mine. T. Faull.

Union Hill, Nov. 22, 1869.

Sunken Treasure.—Three treasure ships have been sunk at sea within a few months, as follows: The Hamilia Mitchell, with $250,000 on board, in the China Sea; the steamer Carnatic, in the Gulf of Suez, with $245,000, and the Lutine, buried in a sand bank under sixteen fathoms of water, with no lees than $5,000,000. Colonel Gowans, who raised the sunken Russian fleet at Sebastopol, proposes to send divers down to the Lutine next summer.

Gunnery Experiments.—The London *Globe* details some late artillery experiments which showed that in spite of all poseible care in the arrangement,—the exact level of the center of the muzzle of the gun heing taken on the target hy means of a theodolite,—the ehot would strike ten inches ahove it. Theoretically, the ehot would fall hy gravity, and its center should have struck about two inches below the level. The prohable explanation is, that the reccil is sensibly felt before the shot has left tho gnu, and that the resultant of the forces acting on the gun and carriage tends to throw the muzzle up; thus the projectile, although seemingly fired point-hlank, really leaves the gun at an angle. With the 12-pounder breech-loading gun, this angle was found to equal ahout thirty minutes, while with the 9-pounder muzzle-loading Indiau gun it equals only ahout thirteen minutes. The difference is prohahly due to the projcctile taking a longer time to pass through the hore of the breech-loading guu. It may be mentioned that wheu the gun is swung as a pendulum and fired with its axis horizontal, the shot strikes below the level.

The Superiority of American Inventions in Europe.—I suppose that the foreign patents of American inventors that have heen copies of patents previously granted in this conntry are the best that are granted ahroad; and I know that many au English or Freuch inventiou that has heeu patented without difficulty there, has been stopped iu its passage through our office hy a reference of some patent previously grauted in this country, or perhaps iu the very country of its origin. In epite of our examination, which rejects over one-third of all the applications that are made, or, more properly, hecause of it, iuvention has heeu stimulated by the hope of protection; and nearly as many patents will iseue in the Uuited Statee this year as in the whole of Europe put together, including the Britieh Isles. But a few days ago I took up a volume of Italian patents to see what progress the new Kingdom was makiug in inventions, when I was amused aud gratified to find on every page the name of the universal Yankee, re-patenting there his American invention, and, I suspect, much the best customer in the Patent Office of united Italy. The truth is, we are an inventive people.—*Patent Commissioner's Report.*

A Varnish which Dries Quickly. Twelve parts of shellac and four parte of borax are added to 100 parts of water; heat ie carefully applied, while the mixture is continually stirred, and eoon a complete solution is obtained, which is colorless or hrown according to the color of the shellao employed. This eolutiou forms a varnish impermeable to water and uot acted on by the atmosphere. It can be used with oil paints to make them dry quickly hy adding an equal part of tho varnish with a little turpentine to the oil color, and ruhhing them together until a homogeneons fluid mixture is ohtained. This mixture dries in from ten to fifteen minutes, and hence only a small quantity must he prepared at a time.

Match-Makers' Jaws.—The makers of lucifers are eubject to caries of the jawe, which are frequently destroyed by the die-ease. Professor Schoottar is said to have devised a means of depriving the phospho-rus which is the cause of this. By exposing it for some time to a temperature of 47°, this yellow, waxy, transparent suhstance transforms into one which is dark and brick-liko. It may now be packed in boxes without danger of spontaneons com-hustion, ie no longer poisonous, and ie still capable of heiug used for making lucifer matches.

The Southern Phosphate Trade.—The famons beds of phosphate of lime, near Charleston, S. C., are eighteen inches or two feet thick; the phosphate is worth iu Charleston $6 a ton for fertilizing pnr-poses. It is proposed to construct a canal fifty feet wide, three feet deep, and two miles and a quarter long, extending from the phoephate beds to Ashley river, so that the material can be hoated down to the city.

Man Condensed Air.—Liehig says that science has demonstrated that man is formed of condensed air; that he lives on condensed as well as nncondcnsed air, and clothes himself in condensed air; that he prepares his food by means of condensed air, and hy means of the eame agent moves the heavieet weights with the velocity of the wind; in fact, man is wind, and wind is man.

Mechanical Progress.

"Spinning" Metals.

Another way of utilizing the flowing property of metals, which we have often alluded to of late, with extracts from Mr. Anderson's lectures, is the "spinning". The sheet metal, by gentle pressure combined with rapid motion, is caused to "flow" into various forms,—as for instance, hemispherical, oval, or even irregular forms. The process is fast taking the place of the old die-stamping, wherever circumstances will permit. Unlike that process, it does no violence to the metal; sufficient *time* being given by it for the particles to move.

"A very rapid circular motion is given to the sheet of metal, and then by means of an instrument held in the hand, a gentle pressure is brought to bear on one point, thus causing a slight depression; but as the sheet is spinning at high velocity, the depression at once forms a circle, and so by continuing the pressure of the instrument it is molded into any form accordingly. The operation is performed in a species of lathe. A mold of the required form is generally fixed on the end or face-plate of the revolving spindle; the sheet or disk of metal is held by pressure from another headstock against the mold, and by the local pressure of the instrument is formed into the shape of the mold behind it.

The French, who were the originators of the process, employ it with great dexterity in the production of such articles as large oval dish-covers. The sheet is secured to the center of what may be called an oval chuck, and by a dexterous use of two pieces of greased box-wood, the workman cleverly prevents the sheet from puckering as he spins it into an oval, and finally turns over the outer edge into a border, thus giving it rigidity as well as a neat finish."

COAL AND SMOKE CONSUMPTION.—On the Pensylvania Railroad, experiments are now making,—says the Chicago *Railway Review*,—with an apparatus for bituminous coal, invented by J. T. Rich, of Phila., who puts into the fire box a "dead plate," extending from side to side, sloping from a short distance beneath the door, and then turning down perpendicularly to the grate-bars. Above is a fire-brick arch extending from the back well forward, around which the ascending flame must past toward the front. Outside the door is a hopper, constantly supplied with coal, which it passes in, as that already in the fire-box works down to the dead plate. A fire being started in the grate, cokes the coal on the dead plate; and the heat is utilized by passing around the arch and through the flues. As the coke thus made itself burns away—its heat and gases, without smoke, passing through the flues—new coal constantly works down and undergoes the same process. The experiment thus far shows there is no doubt that the process will result in almost entire freedom from smoke; but the practical question whether steam can be made fast enough, is not yet decided.

PHOTOGRAPHING WITHOUT A LENS.—Mr. James Thomson, of Glasgow,—it will be remembered by the readers of the PRESS,—cut thin slices out of the center of fossil corals and ground and polished the specimens until they were sufficiently translucent to be used as negatives from which to take photographic prints upon paper. In connection with Mr. Swan, the patentee of the carbon process, he is now trying experiments upon a plan which they hope will result in the production of blocks from these coral sections which can be used in the common printing press, to print from. So says the *Mechanics' Magazine.*

HEATING SURFACE OF BOILERS.—Recent comparative experiments have shown that 42 feet of boiler surface made 22 pounds of steam from 35·2 pounds of coal; 52·5 feet surface made 220 pounds of steam from 30·75 pounds of coal; 63 feet surface made 220 pounds of steam from 29 pounds of coal; 84 feet surface made 220 pounds of steam from 27·55 pounds of coal; 105 feet surface made 220 pounds of steam from 27·21 pounds of coal.—*Deby's Steam Vade Mecum.*

"SQUIRTING" SOLID METALS.—It is well known that solid lead, and tin, and copper (not to mention wrought iron and steel) may be squirted through a hole by means of a piston under great pressure; and that this property is taken advantage of in various manufactures,—as for instance the making of lead pipes, of the tubes for artists' colors, and the copper casings for patent cartridges. In a recent lecture at the Society of Arts, London, John Anderson, C. E., noted this property of metals and described various processes dependent thereupon. In the course of his remarks he said: "A very singular result was obtained by an attempt to squirt brass pipes, which are extensively used as steam boiler tubes and for gas-fitting purposes. This brass consists of sixty parts of copper and forty parts of zinc, and of various other proportions; but, singular to relate, the pipes so squirted were zinc rather than brass; the most of the copper remained in the vessel and refused to flow. We are not to infer from this that the copper would not flow, but rather that the union between the zinc and the copper was less than the pressure necessary to make the copper flow; the mixture may have been more mechanical than chemical, or the temperature may have been such as to have had the zinc too near its melting point. Whatever is the explanation, the subject is well worth further experiment."

STEEL ENGINE-CRANKS.—Vickers & Co., Sheffield, have cast the second of the two largest steel cranks ever made. Its weight was 38,500 pounds, over seventeen tons. Five hundred and fifty crucibles were poured, in regular order, in making it. Steel castings have shown surprising and uniform cohesive strength and toughness. They are unquestionably free from internal flaws or defects of any kind. A cast steel engine crank, especially of large dimensions, is more likely to be sound (apart from the greater strength of steel *per se*) than a heavy wrought iron forging of the same shape. Even in wrought iron forgings presenting no visible or definite flaw, sections cut out and tested have been found to bear no more than 7,000 or 8,000 lbs. per sq. in. The strength of steel, on the contrary, would not vary much from 70,000 lbs.—a strength attended with great toughness or endurance when exposed to sudden shocks.—*Van Nostrands for December.*

MANUFACTURE OF QUICKSILVER BOTTLES. A circular disk of wrought iron is, by a stamping process, gradually brought into the shape of a cylinder, open at one end, like a glass tumbler. It is then put upon the end of a steel pin or mandrel, and by mechanical pressure, is pushed through a hole, which hole is smaller than its own dimension, thereby reducing its exterior diameter, and at the same time drawing or rather pushing the iron over the mandrel in the same manner as a piece of dough could be drawn over the finger to fit like a glove. This process is repeated through a succession of smaller and smaller holes, one after the other, until at length it becomes a long cylinder. The neck of the bottle is formed by a repeated pressing and twisting at the open end into a conical die, by which means it is gradually brought to the proper form. A screw is afterwards formed for the stopper by the ordinary means.

WATER PROOF FABRICS.—The *Mechanics' Magazine* says that M. Neuman has discovered a way of making cotton or woolen fabrics impermeable to water, which consists in submitting them to the action of strong sulphuric acid for from one to two seconds, according to the nature of the fabric. The fiber is thereby superficially decomposed into a glutinous material. The article is then passed rapidly through water, and then dried over cylinders. The glutinous matter fills the spaces between the threads.

PLUMBAGO AS A LUBRICANT.—Mr. Thos. Shaw found that a planer whose bed-plate required eight men to slide it when lubricated with the best ordinary material, could be easily moved with one hand when good plumbago was used.

Scientific Progress.

Gigantic Fossil Serpent in New Jersey.

Prof. O. C. Marsh describes, in the *American Journal of Science and Arts* for November, a new fossil serpent from the tertiary of New Jersey. We give the opening and concluding paragraphs of the paper:

"The earliest remains of *Ophidia* both in Europe and this country have been found in the Eocene, and nearly all the species from strata older than the Post Pliocene appear to be more or less related to the constricting serpents. Remains of this character are not uncommon in European rocks, but in this country two species only, one founded on a single vertebra, have been described hitherto, and both of these were discovered in the Tertiary greensand of New Jersey. An interesting specimen from the same formation, recently presented to the Museum of Yale College, indicates a third species, much larger than either of the others, in fact superior in size to any known fossil ophidian, and not surpassed by the largest of modern serpents.

This species is represented by a single dorsal vertebra, somewhat injured. * * The vertebra here described would indicate an animal not less than thirty feet in length, probably a sea-serpent allied to the Boas of the present era, In view of its superior size, the species may appropriately be named *Dinophis grandis*. This interesting specimen was found in the Eocene greensand, near Shark river, Monmouth county, New Jersey, and was presented to the Peabody Museum of Yale College by Dr. W. S. Kimball, of Eatontown, in that State. The occurrence of closely related species of large serpents in the same geological formation in Europe and America, just after the total disappearance in each country of *Mosasaurus* and its allies, which show such marked ophidian affinities, is a fact of peculiar interest, in view of the not improbable origin of the former type; and the intermediate forms, which recent discoveries have led paleontologists, familiar with these groups to confidently anticipate, will doubtless at no distant day reward explorations in the proper geological horizon."

SUN NOTES.—Prof. Zöllner, of Leipsic, in a report of his observation upon the August eclipse, a portion of which we find translated and illustrated in the *Journal of the Franklin Institute*, says: "As early as the 27th of June, the first clear day after a long spell of cloudy weather, I observed the bright protuberance-lines. As soon as I approached the slit of the spectroscope to a certain position on the sun's limb, where the lines appeared particularly long and bright, linear flashes passed through the whole length of the dull spectrum *over* the limb of the sun, three or four minutes distant from the latter. These flashes passed over the whole of the spectrum in the field of view, and became so intense at a certain point of the sun's limb as to produce the impression of a series of electrical discharges, rapidly succeeding one another, and passing through the whole of the spectrum in straight lines. This phenomenon can be explained by the hypothesis that small, intensely incandescent bodies moving near the surface of the sun, emit rays of all degrees of refrangibility, and produce flashes of a thread-like spectrum as their image passes before the slit of the spectroscope."

ERICSSON IN A NEW FORM.—M. Delaurier describes, in *Les Mondes*, a method which is proposed for utilizing the sun's heat, for which the author claims many advantages over any use of lenses or mirrors. He proposes to admit the sun's rays into the large opening of a truncated cone open at both ends, and lined with polished silver. The angle of incidence being equal to the angle of reflection, all rays would be united at the small end of the cone. The longer the cone the smaller the opening at that end and the greater the concentration of heat.

STEEL BELTS.—"A friend of ours proposes to use steel belts for certain cases, such as fans. The steel must be welded perfectly, and must be of mild quality, and the pulleys must be large, to make them work well. Steel belts would run with less power than leather, because the power exerted in bending them would be restored when they straightened themselves."—*Artisan.*

Something Besides Chemical Affinity.

At the late meeting of the British Association at Exeter, Prof. Stokes, the President, made use, in his inaugural address, of the following language: "But do the laws of chemical affinity, to which, as I have endeavored to infer, living beings, whether vegetable or animal, are in absolute subjection; together with those of capillary attraction, of diffusion, and so forth, account for the formation of an organic structure, as distinguished from the elaboration of the chemical substances of which it is composed? No more, it seems to me, than the laws of motion account for the union of oxygen and hydrogen to form water, though the ponderable matter so uniting is subject to the laws of motion during the act of union just as well as before and after. In the various processes of crystallization, of precipitation, and so forth, which we witness in dead matter, I cannot see the faintest shadow of an approach to the formation of an organic structure, still less to the wonderful series of changes which are concerned in the growth and perpetuation of even the lowest plant. Admitting to the full as highly probable, though not completely demonstrated, the applicability to living beings of the laws which have been ascertained in reference to dead matter, I feel constrained at the same time, to admit the existence of a mysterious *something* lying beyond—a something *sui generis*, which I regard, not as balancing and suspending the ordinary physical laws, but as working with them and through them to the attainment of a designed end."

DIAMONDS IN OREGON.—Dr. C. F. Chandler recently sent a specimon of ore containing native platinum from Oregon, to Prof. Woehler of the University of Göttingen. A letter from Prof. W. which is given in the American edition of the *Chemical News* for November, informs Prof. Chandler that he finds therein the new mineral composed of sulphide of ruthenium and sulphide of osmium as in the Borneo platinum examined by him some time since, to which mineral he gave the name of Laurite. After detailing the steps of analysis, Prof. W. adds: "On examining under the microscope the mineral powder which had been freed from platinum, gold, chromic iron (in part), silica, iron, and tin, —and from which the ruthenium, etc., had been removed by aqua regia,—besides many grains of chromic iron and beautiful hyacinth crystals, colorless and transparent grains resembling quartz were observed, but besides these, grains resembling rounded diamond crystals were detected. To ascertain whether these crystals were really diamonds, a gram of the powder was ignited in a stream of pure oxygen gas to convert the carbon into carbonic acid. * * * I am satisfied, therefore, that besides the laurite, iridosmine, chromic iron, hyacinth, etc., the Oregon platinum contains microscopic crystals of diamonds."

SILVER IN FOSSILIFEROUS CRETACEOUS DEPOSITS.—A paper by J. P. Kimball in *Silliman's Journal* for Nov., on the geology of Chihuahua, closes thus: "Although the metamorphic Cretaceous is, through the labors of the Geological Survey of California, well known in numerous localities in the Coast Ranges, as a seat of gold deposits, and the Jurassic, east of the High Sierras within the territory of the United States, as a seat of silver deposits, the instances above given of the unequivocal fossiliferous Cretaceous, as well as a probable metamorphic and later zone of the same series, as sources of silver ores, are the first in North America yet reported. The only parallel occurrence yet brought to light, so far as I am aware, is in Chili, where, according to Mr. Rémond, calcareous fossiliferous Cretaceous Strata carry silver deposits, evidently much in the same way as at Santa Eulalia."

ROCK-SALT PRISMS.—At the late meeting of the British Association, C. Brooks, F. R. S., described the method adopted to make prisms of rock salt for spectroscopic use. To prevent the splitting off of the apex of the prism, which repeatedly occurred before it could be ground to a sharp edge, the crystal was finally put in a tin box containing sufficient sand to cover it, and with gradually increasing heat, brought to a high temperature. It was then very slowly cooled. This annealing process furnished crystals which could be ground without splitting.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

ALPINE COUNTY.

Tarshish.—*Miner*, Dec. 4th: Fine ore is being taken from the south drift of the upper station. This ore is much nearer the surface than any yet taken from this mine.

Florence.—A report comes to us that the old Florence claim is about to be sold to Eastern capitalists, who will open it up in the spring.

A London Company.—The Exchequer Silver Mining Co. of London, have, through Mr. Chalmers, of the Imperial works here, purchased several parcels of mining property near the heed of Indian creek, and work is soon to be commenced thereon.

M. C. M. Co.—We hear of responsible parties who offer to put up furnaces for this mill in the spring which shall enable it to teke out 85 per cent. of the gold and silver in our ores et less thau half the cost of the old way of roasting. Ample provisions is made by the compeny for funds to cerry out the programme now found necessary.

AMADOR COUNTY.

Kennedy.—*Dispatch*, Dec. 11th: Work on this mine was resumed last Monday, after a suspension of three weeks, since which time they have struck richer rock then has ever been taken out of the mine heretoiore.

CALAVERAS COUNTY.

Coffee Mill.—*Chronicle* 11th: The Golden Gate Mining Co's claim—yclept the Coffee Mill—is worked out. The pumps have been removed and the mine allowed to fill with water. The mine has been worked, with varying success, for a number of years. A valuable engine and battery is connected with the abandoned mine.

Copperopolis.—The San Josquin *Republican* says that James Tullock last spring commenced an eight-foot shaft in the slate near Copperopolie. The result is the discovery of a lode 150 feet wide at the top, and widening down. The ore teken out in the sinking has worked in arastras from $10 to $60 per ton. The ledge hes been located for about four miles, and will be actively worked. Mr. Tullock purposes putting up milling machinery for the reduction of his ore upon an extensive scele.

MARIPOSA COUNTY.

Washington Mine.—*Gazette*, 10th: We are informed that three-fourths of this property, near Hornitos, has been disposed of to parties in San Francisco for $100,000.

INYO COUNTY.

Cerro Gordo.—A Los Angeles telegram of Dec. 15th says: Large shipments of argentiferous galene, from the mines end smelting works of the Cerro Gordo district, ere being received for San Francisco. Nine hundred and eighty-five bars, end upwards of forty-one tons, go by the steamer Pacific to-morrow; the assay gives $300 to $600 silver to the ton.

NEVADA COUNTY.

Idaho Mine.—Grass Valley *Union*, Dec. 6th: The Supt'e report shows the net receipts for the year to be $174,783.04 in coin. Rock crushed, 9,488 tons. Averege yield per ton, $32.50. The main shaft is now down 59 feet below the 500-foot level. Within a week the company will commence sinking a new ehaft, which will be 6½x20 feet, with two cage-ways, a pump shaft and a shaft to eink with. Thie will be located 120 feet east of the shaft now in use. It is proposed to sink the new ehaft 720 feet.

Gold Shipments.—Grass Valley sent to San Francisco, by Wells, Fargo & Co., on Monday and yesterdey, the eum of $38,000 in gold bars. So far this month the shipments have been extraordinary.

Graniteville.—Same of 9th: The Mutual Co. seuds to Findley & Co. a lot of gold, which was made into a bar worth $4,000, the result of three weeks' run with five stamps.

New Machinery.—*Gazette*, 5th: The West Eureka Co. have struck a lead on Worthington'e ranch, supposed to be a continuation of the Eureka. They have incorporated with a nominal capitel of $220,000. They are erecting machinery for pumping and hoisting.

North Bloomfield.—Same of 11th: The Gravel Co. have discharged 150 workmen who have been employed during the summer and fall on the ditch and dam at Bowman's. They will resume work as soon as possible in the spring.

Eureka.—*Transcript*, 9th: The old Jim ledge is lerge and the rock is rich. Black & Young's mill is running upon rock from the mine. Both these claims will be worked through the winter.

Banner Mine.—Seme of 14th: The Benner Co. have struck rock of exceeding richness, and last week a single car load was brought up containing $7,000. The rock is the richest in free gold ever taken from the mine.

The Channel Struck.—The Kansas Co. have succeeded in finding the gravel channel, which runs below the ridge below the Blue Tent roed beyond the east gap of Suger Loaf. Although the works do not yet extend sufficiently to allow us to speak with certainty as to the yield, all the indications show that as a mining euterprise it is unequelled by any other of late years. Many are of the impression that this is on the same channel with the old Nebreska claims. There is a lively demand for mining ground in the viciuity, and holders who could not sell two months ago are now sought by those who are enxious to buy. We understaud thet men with capital stend ready to take hold, and that five or six companies are meking arrangements to go to work.

SHASTA COUNTY.

Mining Items.—*Courier*, Dec. 11th: The Washington Quertz Co., French Gulch, having crushed 146 tons of rock, cleened up this week, and realized about $8,800. ....The Highlend is doing well, and the ledge looks more promising theu ever.... The Honeycomb Co. have 180 tone of rock out ready for crushing.

SIERRA COUNTY.

The Brush Creek Mine.—Grass Velley *Union*, 11th: We yesterday received e letter from J. M. C. Walker, now superintending the works of the Brueh Creek mine, Sierra county, who writes thet the last cleen-up gave $27,500. This was taken out and shipped off et a total cost of $7,500, leaving as profit $20,000. The averege of rock crushed so far has been $42.50 per ton, and the ledge is of the average thickness of six feet. Nick Watson is the owner.

SISKIYOU COUNTY.

Eliza.—Yreka *Union*, 10th: The yield of gold ie en average of $17 to the ton. Lash informs us that his men are at work ou en air shaft to ventilate the lower level.

McAdams Creek.—A gentlemen informs us that the prospects for a good mining season are very favorable.

TRINITY COUNTY.

Quartz.—*Journal*, 11th: Henry Engel hae obtained, near Norfolk, a vein of gold-bearing quartz, which promises not only a large yield, but to he extensive. Several tunnels have been run, and considereble quertz crushed hy an arastra, none of which has returned less than $30 per ton.

Items.—Giant powder is being used on Union Hill, neer Douglas City, with satisfactory resulte....The Indian Creek Fluming Co. sold out this week to a company of Chinese....R. S. Baker end Jere. Long heve etarted into the henk on the west side of Sidney Gulch. They heve expended considerahle labor in putting in a flume.

YUBA COUNTY.

Pennsylvania Mine.—Cor. of *Appeal*, 8th: "To a new company of the right kind of men, this mining property is fully worth the money which has been spent upon it. There is good quartz enough in sight to supply the 16 stamps of the company day and night, without interruption, for months, end perheps years. To judge from the result of the last cleaning up, a monthly yield of at least $10,000 may be fairly expected, the expenses for the same time not being over $3,000. Circumstances will change, and more competent men will be found to develop our resources; only then will it be found that Brown's Valley mines can be worked to advantage."

Smartsville.—A correspondent of the Grass Valley *National* says: "The Hafenegger powder is soon to he tried egain in one of our claims. The late accident was caused by one of the men letting his candle drop into the powder while temping."

Arizona.

Items.—*Miner*, Nov. 27th: C. V. Beseler, from San Francisco, comes here as Supt. for the Sterling....Jas. M. Tiernan, Supt. of the Pinos Altos, is to examine our mines and report upon them....The Vulture mine has procured a cylinder head from Los Angeles.

Silver Mountain.—Thie district is about 50 miles south of Prescott. It was first prospected in 1864. The principal lodes are: The Mammoth, Monterey, Huff and Snow-Ball. The Mammoth crope ont three miles, and, in some places, measures 113 feet in width. The Monterey, in places, is 100 feet thick. Ths Huff end Snow-Ball are not qnits so big. The Hnff is richest in silver, having essayed $640 per ton. Timber is not plenty in the immediate vicinity, but vast forests exist in the mountains, five or six miles to the northward. Water and grass are plenty. The owners are anxious to have their lodes worked, and stand ready to give capitalists a fair show.

Colorado.

Georgetown.—*Miner*, Dec. 2d: The Brown Co., on Sunday, shipped 6,444 ounces of silver bullion, coin value, $8,377.20. This is the product of 22 tons of ore. ....J. Standley sold to Wm. J. Stalker one-half the Stelker and Staudley claim, on the California lode, for $75,000....The reduction works of L. Huepeden & Co. produced, during November, $5,999.95 ounces of silver bullion, coin value, $6,406.32....A well defined lode has been struck in the Helmick tunnel....Pioneer Co's mill, at Montgomery, is running on Personsge ore, with good results. Work is going on in the Excelsior lode, at Buckskin; in Mosquito, the Orphau Boy lode is being worked hy three differsnt companies, and considerahls ore is heing rsised; a new mill is spoken of. The arastras of Newlan and Hostetter have been running steadily all summer with good results. Gulch mining for this season has about cease a ....Slaughter and Wetson have locatedd. tunnel on the north face of Burrell and are working their way into the mountain. The heading has reached 40 feet from the mouth....Several other tunnels are progressing....Mc Namara, Shaw end Hartwell have made a rich strike near Alvarado. An eight-foot sheft shows rich ore. ...Collum's reduction works will commence operations in a few days....The Burleigh tunnel has entered softer rock, and is making rapid progress.

Albro Lode.—One assay of Albro selected ore gave a yield of $411 in silver, end $17,747 in gold, aggregating $18,158 per tou. The average yield of the surface quartz, under arastras, was $200 per cord.

Mendota.—Stewart treated 5,180 pounds of Mendota ore by smelting, which gave a yield of $168.43 in silver, coin value, and 27 per cent. leed, per ton.

Ni-Wot.—The twelve tons of ore now on the dnmp will yield bullion enough to pay a lerge share of the expense of sinking the ehaft.

Par Lode.—An sssay of two samples of average ore, by Prof. Brown, gave a yield of $756.60, and the other, $1,333.80, per ton, and one sample, assayed hy Cherles H. Martine, gave a yield of $721.43 per ton.

Coaley Lode.—Central City *Register*, Dec 2d: H. Goodspeed hes just had a lot of ore run, which yielded an average assey of $650 per ton. He has a vein of ore eight inches thick, which yields $1,099 per ton. He has been sinking a sheft for 60 feet in cep.

Black Hawk.—*Herald*, Dec. 1st: The Black Hawk and the mill adjoining are running 80 stamps on Neveda and Gregory ore—40 ton the latter, 20 on Stalker & Standley's cleim on the California, and 20 on Clark & Co's. Woodbery & Norton's mill keeps 6 stamps on Ophir, 5 on Burroughs and 6 on ore of Winnebego Hill. Ahbot is running 15 stamps at the Sterling mill, in Chese gulch, for Ewers and Dunnegau, on U. P. R. ore. The eame lead keeps 10 stampe employed at the old Hurd mill. The other 10 stamps have been crushing ore from Nevada and from the Hunter lode of Mountain City. M. B. Hays is running 15 stamps at the New York mill.

Briggs Mine.—On Saturday evening last a piece of ore weighing five or six pounds was taken out, which had a vein of almost pure gold running through it. The vein was about an inch wide, and the gold was in the shape of wire making a perfect mat.

Montana.

Items.—Virginia *Times*, Dec. 3d: The Pine Grove and Highland Flume Co. have been engaged all the week in cleaning up. The result is unknown. The How mill is running on the ores of the Polar Star and Nelson. No cleen up has been made. The plates look well. The Louane of Brown's gulch is said to look better than ever in the face of the tunnel. The Pacific Union maintains the place of No. 1, and development shows the Black to he hnt little behind it.

Bannack.—We learn that operations have mostly ceased for the season, outside of prospecting and teking out of dirt for spring washing. But one of the quartz mills of the district is running. Bed-rock has been reached in the main creek, by sinking two feet below the level of the drain, and although the dirt was necessarily taken up in ths wetsr, as high as $6 to the pan has been obtained.

New Discovery.—Helene *Gazette*, Dec. 2d: We are informed that a new gulch was discovered two weeks ago, seven milss east of Reynolds City, twenty miles long. No hig strike has hesn made, but prospects for good wages diggings have been obtsined. The gulch is called "Your Name."

Unionville.—Hendrie's, Hodge's, Addiss', Turnley's and the I. X. L. mill, running ahout 100 stamps, ars pounding continually, night and day, on ore from the Union end Park lodes. The Columbia Mining Co's mill, now heing overhauled by Mr. Tatem, the Supt., will add 30 stamps. Wednesday Mr. Hendris is to build a new 30-stamp mill for Mr. Whitlach.

Virginia.—Nevins and Fair, of Highland, have returned from the Stetes, and again commenced operations on their tunnel. Operations ars almost suspended on Ouly Chance arastras, owing to the scarcity of water. Humhug gulch has failed entirely, and ths arastras are dependent on the stream furnished by the Ballarat tunnel. Prof. Swallow's mill is idle, though furnaces are being erected for roasting silver ores.

Whitlatch, McClure and Argyle Mine. Very rich quartz is coming out now. The mine has been developed to a depth of 260 feet or more, with a large body of uniformly rich ore in sight. This company owns two huudred feet on each side of their shaft.

More Items.—The Parkinson has just struck a fine vein of rich ore....Diamond City mill is running 10 stamps on Park ore. Ten stamps are to be added....Turnley's mill is hard at work....Work on the Park lode is progressing rapidly. There is ore enough in sight to keep the mill at work all winter....The total number of stamps running in the neighhorhood is 124. The new Whitlatch mill will add 30 to this.

Idaho.

Alturas.—*Statesman*, Dec. 9th: Mr. S. B. Dilly, just down from Rocky Bar, reports everything prosperous. Miners all had their winter's supplies laid in; and everybody full of confidence as to the future prospects of the camp.

At the North.—The Grande Ronde *Sentinel* learns of a gold discovery on the divido between the Salmon end Weiser rivers, 40 milee north of Warren'e diggings. It wes discovered last summer, but not prospected until recently. The diggings ere said to he exceedingly rich.

Nevada.

COPE DISTRICT.

Atchison & Drew.—This mill. started up last week, and everything is working in the most satisfectory menuer. They have an abundance of ore on hand, and will soon clean up, when the first shipment of bullion from the district will be made.

Mammoth.—Twenty-six hundred pounds of choice ore from this mine, reached here yesterday, and will be sent below for treatment. Five tons more ere on the road. They are taking out one ton of first-class ore daily and three tons of second-class. The Canty mill has arrived, and will be running inside of 30 deys.

Ores for Milling.—Hendy is on his wey to San Francisco with samples from Pride of the West, Great Republic, Lord Byron, and Black Prince ledges, to he tested by mill process. Assays of the two last-named show $723, and $203 to the ton respectively. Mr. H. goes to arrange for a mill to he crected in the district.

Reports from Railroad and Bald Mountain districts are encouraging.

REESE RIVER.

Lander County.—Daily developments are made in Spring Valley, Sierra, and Secret Valley. During the past week lots of ore from those districts were reduced at the Manhattan mill, the yield of which was fully up to that obtained from the cream of White Pine. One emall lot of 500 pounds, which was sent to the mill as a test, gave at the rate of $2,500 to the ton! Other lots, amounting to several tons each, gave yields of silver varying from $300 to $875 per ton.

Yankee Blade.—This once lively camp is again holding up its head. There is a fair number of men successfnlly working, and some are doing remarkably well.

Troy Mine.—Same of 10th: The lessees have tapped it *in bonanza*. This morning, Mr. J. Moss brought to this office a very fine specimen of the ore, which is a mass of black sulphuret, with here and there ruby. We were informed by him that of a lot sent to the Manhettan mill for reduction the first class yielded $1,114 of silver

to the ton, and second class, $367. The chimney presents the appearance of being permanent.

MINERAL HILL.—Elko *Independent*, Dec. 11th: Work is progressing on the Austin, Gray Eagle, Maggie, Giant, Vallejo and Silver Queen ledges. The ore taken ont has generally, so far, been shippod to Austin for reduction, at a cost of two cents per pound for hauling. Of late some companies have been shipping to the English mill, near Reno, and find it economy to do so. The Confidence mill, in Park Cañon, has been bought by partiee interested, and will immediately be moved. Several otber mills will be erected at an early day.

REVEILLE DISTRICT.—Cor. of the *Empire*, 9th: The Masou & Co. mill—ten stamps—will be running week after next. This mill is 12 miles from here. I am informed that it is a splendid mill, completo in every respect. Howell & Co. are about moving the Harris mill—five stamps—to this district. Taylor Co. & have bought a water privilege, and intend moving the Park Cañon mill here directly. Numerous other mills are projected for the spring. The mines of Reveille are exactly the counterpart of those of Treasure Hill—both as to formation and character of ore. An old claim—the Spy—which was covered by earth and loose material, and on which nothing but assessment work had been done, was uncovered by the owners to the extent of twenty feet in one direction and fifty in another, displaying the richest ore I have ever seen. Horn and native silver can be seen all through it. The lowest estimate I have heard is that it will mill $1,000 per ton.

WASHOE.

HALE & NORCROSS.—*Enterprise*, Dec. 12th: The north drift from cross cut No. 3 is within 45 feet of the northern boundary. The ore is of excellent quality. All of the ore on this level is yielding splendidly at the mills. The winze now being sunk from the fifth level is down 35 feet, and is in very fine ore. They yesterday made the connection between the old and new mines, a work upon which they have been engaged nine months.

OPHIR.—The water is being lowered in the shaft and has settled considerably in the old works. A new tank will be ready to-morrow.

SEGREGATED BELCHER.—A body of ore has been struck on the 500-foot level, which is yielding finely and widening. On the 400-foot level the ore on the east wall is looking well, the car assays showing $40 per ton. The winze on the 230-foot level is down ten feet in fair ore. The mine has been stopped for a day or two, in order to put in a new safety cage. They have on their dump 600 tons of ore.

VIRGINIA CONSOLIDATED.—The shaft is down 470 feet in favorable rock.

BULLION.—They are still drifting north and south on the 1,400-foot level. The ground is perfectly dry and the air good, but hot. No pay ore has yet been cut.

GOULD & CURRY.—The yield from the old upper workings is 50 tons per day, assaying $40 per ton on the average.

IMPERIAL-EMPIRE.—Sinking and drifting still actively prosecuted.

YELLOW JACKET.—Present daily yield, nearly 400 tons, including a large amount of low-grade ore from the old north shaft, which is being shipped on the railroad to Carson river.

CHOLLAR-POTOSI.—From the old works they are taking 160 tons per day. It assays $38 per ton.

OCCIDENTAL.—This mine is yielding the usual amount of ore from the upper levels, and the lower tunnel is being driven in ledge matter in the direction of the pay ore found above.

SIERRA NEVADA.—The machinery of the mill is being overhauled. It will be some three weeks before these repairs will be completed.

SUTRO TUNNEL.—The tunnel is in 299 feet. They made 45 feet during the past week. No change in the character of the ground.

CALEDONIA.—Drifting west from the bottom of the shaft in ore that looks very favorable.

CROWN POINT.—Still drifting in hard porphyry. The east drift is in over 500 feet.

BELCHER.—The body of ore at the 152-foot level continues looking well, and average assays are $45 per ton.

OVERMAN.—Yielding 150 tons of ore per day.

HEAVY BULLION SHIPMENT.—Gold Hill *News*, 7th: Last Saturday evening, there wae shipped from Wells, Fargo & Co's Virginia office, 46 bars of bullion, weigbing 3,818 pounds, and worth $112,113.76. This is the heaviest shipment since last March.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, Dec. 11th: Work goes steadily on in most of the leading minee. The milling capacity of the district is fully employed. The general prospect is entirely satisfactory. Not a day passes that repreeentatives of Eastern men are not here, looking after claims in negotiation for sale.

BULLION.—The shipments for the past 7 daye, from this city and Hamilton, figure up only $59,453.09. The base metal value for the week we could not intolligently compute—perhaps $20,000 to $30,000. Last week the pure metal shipment alone was over $100,000. These shipments will not divide up evenly during the winter. A pleasant week will bring ont large shipments from the bullion roome of the mill. The *Empire* of the 12th eays: Some of the mills having been out of repair, and others not having cleaned up, our bullion shipments for tbe week aggregate but $67,-415.42.

MILLS AND FURNACES.—*News:* The Stanford mill has been idle balf the week, on account of some mishap to the machinery; but is now all right. The Metropolitan is changing from dry to wet crushing. Two new pans, Varney's improved, 1,500 pounds capacity each; and also one large eettler, just received at the Swansea mill, will be in place, ready for service, by Tuesday next. The company designs putting in a new boiler in a short time, and increasing the capacity of the mill to 30 tons per day. *Empire:* The Little Treasure mill is being overhauled and put in order to run through the Winter. A majority of the mills now bave nearly enough ore delivered to supply tbem during the Winter. Large smelting works are to be built at Shermantown by Luther, Thornburg and Rawlings.

ITEMS.—*News:* Ravell shaft is down 20 feet, witb a 20-inch vein of quartz—no metal yet....Aurora Consolidated turns out 40 tons daily of $55 ore....The Earl shaft is down 80 feet.....Aurora South seuds 80 to 100 tons to mill daily....Curry shaft is down 140 feet and has ore....Original Hidden Treasure looks better than ever; ships 15 to 20 tons daily to mill.... Eberhardt yields 20 tons a day from the new chamber, and 10 tons from the Keystone hreast.....Pogonip & Othello yields ore faster than it can be hauled to mill.... Constitution has 125 tons on dump; sends to mill 8 to 10 daily....Imperial ore works $100 per ton....*Empire:* Consolidated Chloride works 100 men and ships 70 tons daily to mill....H. F. Rice drift in 62 feet; good ore all the way....Five tons from the Autumn pit of South Aurora gave $960 at the Stanford mill.

EUREKA.—Cor. of *Empire:* There are two small furnaces at work, occupying but a few men. So far as I know, there are but two or three companies here who propose this winter to increase upon the present reduction works. The *News* says that Col. Buel was to fire up Thursday.

THE LATEST.—A telegram, dated Treasure City, Dec 15th, gives these items: The Chloride Consolidated Co. discharged today 112 men. The Aurora Consolidated have discharged most of their hands, and will stop work shortly. Rumors are plenty as to the cause of the action of the companies, some attributing it to high wages, others to a hearing movement on the part of the stockholders.

The Aurora South is taking out 70 tons of ore daily, and will shortly increase that quantity to 100 tons daily.

New Mexico.

UTE CREEK.—*Telegraph*, Nov. 20th: Messrs. Crawford and McCullom informs us that the new tramway is completed and 35 stamps running. The other 15 not yet arrived. The report of the sale of the Maxwell Grant was again in circulation.

RED RIVER.—We stated, some time ago, that Bartlett & Co. has sent some ore from their mine on Red river to Colorado to be treated. The rock yields by the Swansea process $320 per ton, $175 of which can be saved in a stamp-mill

Oregon.

QUARTZ.—A Portland telegram dated 15th, is as follows: Another quartz district has been struck in Baker county, near the eastern border of the State. Many ledges have been discovered and examined, which indicate remarkable richness in silver.

CIVIL ENGINEERING IN 1831.—When it was proposed in 1831 to build a railroad from East Boston to Salem there was not a civil engineer in Massachusetts of sufficient practical knowledge to make a survey. Lieut. Vinton, of the United States Artillery, stationed at Fort Independence, was detailed for the duty.

Analysis of Morning Star Ore.

An analysie of an average sample of ore taken from the dump of the Morning Star mine, Mogul distriot, Alpine county, Cal., gives the following result:

Gold	0.002
Silver	0.150
Copper	18.050
Iron	30.900
Antimony	6 328
Sulphur	$6.501
Magnesia	1,312
Alumina	0.350
Silica	8 200
Loss	0 207
Total	100 000
Value of silver per ton	$10 04
Value of gold per ton	02 83
Value of gold and silver per ton	$72 87

The lower quality of this ore consists of ordinary copper pyrites of a pale yellow color, both massive and crystallized; while the higher class is distinguished by a very striking and unusual peculiarity in its appearance and the arrangement of its mineral constituents, resembling, somewhat, the kernel-roasted cupriferoue iron pyrites produeed at Agordo in the Venetian Alps and other parts of Europe, by means of a very slow process of roasting, extending over a period of from five to ten months, during whicb the copper (not exceeding one or two per cent. in the crude ore) becomes concentrated into nodules, or kernels, of rich regulus in the ceuter of suoh lump, leaving a shell of gangue and sesquioxide of iron. On breaking open many pieces of this bluish-purple Morning Star ore, we find a kernel of rich vitreous copper regulus, enolosed in a ring or shell of bright yellow pyrites, which is again coated by another concentrio layer of purple copper ore, the whole being enveloped hy a bluish-black, crystalline, antimonial sulpbide of copper.

The mine is considered one of the gems of the district, but has not hitherto been remunerative, in consequence of the difficulties experienced in reducing its ore.

W. T. RICKARD, F. C. S.,
Leviathan Mine, Alpine Co., Cal.

INFORMATION WANTED.—A daughter is anxious to know the whereabouts of her father, Jahez C. Arnold, a forty-niner, who formerly kept store and worked quartz at Middle Bar, on the Mokelumne river; also kept store at Campo Seco, and left Jackson, Cal., about 1863. Supposed to have gone to the State of Nevada. Any person who can give any information regarding him, (address Evans & Askey, Jackson, Cal.,) will confer a lasting favor upon an affectionate daughter. [Newspapers will confer a favor by mentioning above facts.]

COAL MINE DISASTER IN ENGLAND.—At Wigan, on the 17th of Novemher, an explosion occurred which resulted in the death of some twenty-seven miners. As it occurred after the hour of knooking off work, many escaped who otherwise would bave suffered. The whole extent of the damage done had not been ascertained at last accounts.

HON. A. A. SARGENT of California, has introduced a hill into Congress, providing that public lands in California, not mineral or reserved, and unfit for cultivation, but useful for lumber, shall be sold in quantities not exceeding 664 acres, to only one person or association; and no second application to be made under the Act by the same party. Such application not to include any improved or settled lands.

THREE MILES OF CABINET ORGANS.—It is said that Mason & Hamlin have manufactured a sufficient number of cabinet organs to form a continuous row, if placed in close contact, to reach a distance of three miles. Such a fact speake volumes of the growing taste for music among our people.

MOUNTAIN RAILROAD PROJECT.—It is said that the Vallejo Railroad proposes building a branch road from the Oroville Railroad to Timhuctoo, and perhaps to Nevada and Grase Valley.

NEW INCORPORATIONS.—Banning Mining Co. Grass Valley. Dec. 14. Capital stock, $110,000, divided into shares of $100 each. Trustees: J. C. Buckland, R. H. Upton and E. C. Parkhurst.

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the MINING AND SCIENTIFIC PRESS and other Journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	OFFICE
Bromide Tunnel, White Pine, Nov. 5, 20c.	Dec. 9	Dec 23
Bullion, Storey co., Nov. 22, $7	Payable immediat ly	
Crown Point, Storey co., Nov 3, $7.50	Dec. 9	Dec. 24
Chicago and Detroit Cons, July 16, 50c	Dec 4	Dec. 27
Cherokee Flat, B. C., Butte co. Nov. 6, $5	Dec. 10	Dec 28
Cons. Virginia, Storey co., Nov. 3, $1.50	Dec. 4	Dec 21
Cons. Chloride Flat, W. P., Dec 14, $1	Jan. 19	Feb 24
Daney, Lyon co., Nov. Dec. 7, $1	Jan 9	Jan. 27
Evening Star Cons., W. P., Oct 19, $1	Dec. 1	Dec. 20
Flowery, Storey co., Nov. 12, $1	Dec 16	Jan. 7
Glenwood, El Dorado co., Dec. 13, 20c	Jan. 1	Feb. 1
Hope Gravel, Nevada co., Dec 10, $1	Jan. 17	Feb. 7
Imperial Storey co., Nov. 15, $10	Dec 20	Jan 14
Julia, Virginia Dist., Oct. 15, 50c	Nov. 18	Dec. 21
Kincaid Flat, Tuolumne co., Dec. 9, $2.50	Jan. 12	Jan. 29
La Blanca, Mexico, Nov. 5, $1	Dec. 4	Dec. 27
Morning Star, Alpine co., $1.50	Nov. 15	Dec. 21
Manchester, Alpine co., July 16, 6c	Dec. 4	Dec 27
Mammoth, White Pine, Oct. 28, 20c	Dec 7	Dec. 28.
Mahogany & G. H., W. P., Nov. 8, 10c	Dec. 14	Jan. 4
Meadow Valley, Lincoln co., Dec. 4, 25c	Jan. 5	Jan 25
Mineral City, W. P., Nov. 3, $1.50	Dec. 6	Jan. 5
North Bloomfield, Nev. co., Nov. 8, $5	Dec. 10	Dec. 28
Noonday, W. P., Nov. 14, 30	Dec. 20	Jan. 15
Ophir, Storey co., Oct. 29, $2	Dec. 2	Dec. 24
Oneida, Amador co., Oct. 5, $10	Nov. 20	Dec. 27
Pilot, W. P., Nov. 24, 10c	Jan. 3	Jan. 18
Pocahontas, El Dorado co., Nov 12, $5	Dec. 20	Jan 12
Rising Star, Idaho, Nov. 5, 50c	Dec. 18	Jan. 15.
Rathbun, White Pine, Nov. 26, 5c	Dec 1	Dec. 22.
Rocky Bar, Nev. co., Nov. 23, $100	Dec. 27	Jan. 18
Silver Star, White Pine, Nov. 2, 15c	Dec. 17	Jan 3.
Silver Vault, W. P., Nov. 24, 5c	Dec. 24	Jan. 24
Sacramento and Meredith, Nov. 15, $1	Dec. 22	Jan. 10
Sierra, Douglas co., Nev., Dec. 3, $1.25	Jan. 6	Feb 4
San Jacinto Tin, Nov. 10, 25c	Dec. 15	Dec. 25
Tallulah, Nev., Nov. 22, $2	Dec. 31	Jan. 25
Taylor, El Dorado co., Nov. 16, 30c	Dec. 20	Jan 10
Yellow Jacket, Storey co., Nov. 25, $5	Dec. 28	Jan. 31
Yosemite, Humboldt co., Dec. 15, 50c	Jan. 19	Feb. 6

MEETINGS TO BE HELD.

Adriatic, Storey co.	Annual Meeting Jan. 3
Badger Hill & Cherokee Gravel	Meeting Dec. 21
Consolidated Virginia	Meeting Jan. 6
Gould & Curry	Annual Meeting Dec. 27

LATEST DIVIDENDS—(Within Three Months).

Amador Co., div. $6 per share	Payable Nov. 8, 1869
Chollar-Potosi, div., $1	Payable Dec. 6, 1869
Eureka, div. $7 50	Payable Dec. 6, 1869
Gould & Curry, Tuolumne co, div 50c $ sh	Pay. Oct. 26, 1869
Ida Elmore, div. $1	Payable Dec. 14, 1869
Kentuck, div. $10 per share	Payable Dec. 6, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct. 10, 1869

*Advertised in this journal.

Latest Mining Stock Prices Bid and Asksd.

AT THE S. F. STOCK AND EXCHANGE BOARD

FRIDAY, December 17, 1869.

WASHOE DISTRICT, NEV.	*Bid.*	*Asked.*
Alpha	18¾	19
Belcher	16	16¼
Bullion, O. H.	16	16¼
Crown Point	18	18¾
Cole (Va.)	—	—
Confidence	—	15
Chollar-Potosi	18¾	19
Daney	—	1
Exchequer	7¾	8
Empire M. & M. Co	—	40
Gould & Curry	70	73
Gold Hill Quartz	8	18
Hale & Norcross	148	150
Imperial	49	50
Julia	¼	¼
Justice and Independent	2	3
Kentuck	147	148
Lady Bryan	7¾	7¾
American	—	—
Occidental	12¼	12½
Ophir	—	15
Overman	82	—
Segregated Belcher	8	9
Savage	43¾	45
Sierra Nevada	10	—
Yellow Jacket	43	43¼
MISCELLANEOUS DISTRICTS.		
Amador (California)	300	302
Aurora, White Pines	13	14
Eureka, (California)	240	250
Golden Chariot (Idaho)	15	—

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Dec. 17, 1869.

W. T. Atwood states the following as approximate price at which copper ores can now be sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		*Per ton*
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	35 20	30 " "	75 00
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per unit. Bars at the rate of 13c. per lb. for pure copper.

HEART-BEATS AND HORSE-POWER.—The work done hy the heating of all the human hearts on the globe is equivalent to the power of 1,046,015 horses. The nominal horse power of the engines in the Great Eastern is 4,000; considering the actual horse power to be 10,000, the power exerted hy the united human-heart beat of the world is sufficient to propel a fleet of 104 Great Easterns at full speed continually. This power could only be generated in average steam engineering practice hy the combustion of 4,680 tons of coal per hour.

IT is stated that the intense cold in St. Petersburg in the winter of 1867, caused solid blocks of tin to crumble and fall to pieces. That this change was due to the intense cold, was proved hy submitting blocks to a low temperature when the same result occurred.

AN important auriferous lode has recently been found about three miles southwest of Tavistock, in Devonshire, England. The ore is stated to be very rich in copper, and to contain some silver and traces of gold.

The PRESS will issue on Friday next, Saturday being Christmas.

Farming and Gardening.

Communications for this department are solicited from all parts of the Pacific States and Territories.

A New Source of Beef Supply.

It is well known that an active and powerful combination of capitalists controls the beef market of this city, and is to-day keeping up the price of that commodity 20 to 30 per cent. above what it would be were it not for this mischievous interference with the natural course of trade. We will not stop here to give the details or evidence of the existence of such a combination; but refer immediately to the welcome announcement that there is a very good prospect of an early release therefrom.

The Sacramento *Bee* of a late date says that a number of beeves lately slaughtered at Promontory and sent in a refrigerator car to San Francisco were offered at twelve and a half cents per pound, and that the beef was superior to the general market supply. Several car loads of live animals have also passed through from the plains to San Francisco.

This fact shows that the California beef market may be affected by the proximity of the Rocky Mountains, now brought so near us by the opening of the Pacific Railroad. Beef has long rated too high in this city, and its quality has been far inferior to what it should be. Heretofore, the profits of cattle raising have been mainly absorbed by non-producing speculators, while the growers have received but little, if anything, over bare living returns. The facilities offered by the railroad, render it very certain that a means is thereby presented for a beef supply quite beyond the reach of interference by San Francisco toll-gatherers, unless they can embrace within their extended arms the entire expanse of our Rocky Mountain pastures. A breaking up of this combination will enable our own growers to deal directly with the butchers, and thus secure to themselves a fair profit, and relieve the consumers from the intolerable burthen of a set of harpies who have fastened themselves upon that important branch of trade. If this Rocky Mountain supply should bring about this desirable reform, it will be a matter of hearty congratulation on the part of our citizens generally.

Currant and Gooseberry Trees.—If you wish to prevent currants and gooseberries from forming suckers, and thus developing into clumps or clusters, and desire to grow them tree form, with a single stalk, take cuttings about eight inches long, in the spring, and cut out all the buds but two on the top, plant about two-thirds their length in good ground, pressing the earth firmly to their entire length; few will fail to grow. They will bear well on and after the second year's growth of wood. The only objection to this method is, if this single stock is damaged by the borer or otherwise, the entire bush is lost; moreover, you decrease the quality of fruit. The best way, however, in practice, is to let each fruit take its natural course and form, a bush. Still when trained to a tree form, the plant is more ornamental and the fruit is larger and finer.

To Keep a Horse on the Trot.—Hiram Woodruff, in his book about trotting horses, says that a pull on both reins will not bring up a horse when he has broken from a trot. A firm, quick pull should be given on one rein, letting the other give a little, as much as you want the horse's head thrown out of line.

Prices of Fruits.—Twenty years ago grapes sold at five cents a pound in Philadelphia; now the same variety commands fifteen. The business of raising choice fruits is not overdone, nor is it likely to be, either east or west.

Selecting Seed Wheat.

The subject of selecting seeds for cultivation has been made a study from time immemorial. Virgil says:

"I've seen the largest seed, though viewed with care,
Degenerate, unless the industrious hand
Did yearly cull the largest."

To insure a good crop of grain, roots, or any other crop, we must plant good, sound seed. In no other way may we expect satisfactory crops. Experiments have shown that if the finest and best samples of seed are annually selected and sown, both the quantity and quality of the product will be improved—even to the establishment of new varieties. All are familiar with the effect of such selection in improving farm stock; the same is true of seeds. If we select and plant or sow "as it comes," we must expect to reap accordingly. A book more ancient than the one quoted above tells us that, "Whatsoever a man soweth, that shall he reap." If he sows tares, he will reap tares; if he sows imporfect seed, he will reap a sickly, imperfect growth.

Interesting Experiments.

We read of an English farmer who, by picking over his seed wheat with the utmost care, and planting a grain in a place, at wide intervals of a foot each way, produced 162 bushels to the acre; when ordinary seed sown in the ordinary way could not have yielded fifty bushels.

At a late meeting of a Kentucky Farmers' Club, Dr. Speer detailed his experience with corn. He had for years instructed his men to select up to a standard sample he gave them—and then himself select the best from that pile. The result was that his neighbors, seeing the extra yield of his crops, came to him for seed, while the distiller paid him an extra price for his corn, because it made more whisky than the imperfect shrivelled corn raised by his neighbors.

How to Select Seed Wheat.

Select the wheat that has made the best growth, and from that portion of the field that has ripened first and filled out the best. Even of that, sow none but the choicest grains *thoroughly cleansed*. No farmer is pardonable in sowing chess, cockle, mustard or any foreign seed with his wheat. Keep the selected wheat by itself, and never place it in large bulk, where it is liable to heat; for the least approach to heating will impair its vitality.

No farmer plants corn without paying some little attention to the selection of the ears for seed. It is a good plan to pursue a similar course in regard to wheat. As it would be too much trouble to examine every head of wheat, in selecting seed for a large crop, let a quantity of the finest and ripest heads be individually selected from the best portion of a field—sufficient to sow ground enough to produce the seed for the next year's crop. From this seed crop select, *every year*, the finest heads for the next year's seed crop. In this way your grain will be greatly improved and your crops increased.

Specific Gravity of Seeds.

From some recent experiments by Professor Church, in England, it appears: First, that seed wheat of the highest specific gravity produces seed wheat of similar quality, and produces the largest amount of dressed grain; secondly, seed wheat of medium specific gravity generally gives the largest number of ears, but the quality of the grain is poorer than that from seed wheat of higher specific gravity; it, however, produces the largest number of fruiting plants; and, thirdly, seed wheat of a less specific gravity than 1.247 is of very little value, yielding only 34.4 pounds of dressed grain for every hundred pounds yielded by seed of the highest specific gravity.

This shows that just in proportion as any sample of seed wheat is heavier than the same measure of pure water, it is in that proportion proferable for sowing purposes. It ought, in all cases, to be at least one-quarter or 25 per cent. heavier than pure water, measure for measure. Light weight in wheat is due to the imperfect formation of the grain—mainly to its deficiency in starch, the principle upon which the starting of the plant depends, as shown below.

The Philosophy of Selecting Good Seed.

All grain seeds are furnished with oil and starch, the use of which in the seed is to provide nutriment for the germ when first it starts, and before it is capable of extracting its food from the soil. Now, if anything affects these properties—this oil and starch—such as mold, etc., the plant will be more or less sickly, and must produce an imperfect seed; and anything which stints a plant just starting, affects its entire after-growth.

It is well known that wheat may sprout and dry up six or seven times, or so long as the spirit-forming material—the starch—is not completely exhausted. So long as a very small portion of this material is left, the seed is still capable of sprouting; but it cannot, if thus measurably exhausted, put forth the required vigor to produce a healthy plant or yield an abundant increase. This sprouting is more or less induced when grain is allowed to heat in a bin or large pile—hence that intended for seed should never be subjected to such a possibility. Moreover, all grain intended for seed should be perfectly ripe, to the end that the starch and all other portions of the seed should be fully and perfectly formed. Old wheat, or that which is two years old, if it has been properly kept, is better for seed than new or the previous year's wheat—experience has shown that it will mature earlier and produce more abundantly.

By careful attention and proper cultivation, as above hinted, the farmer will gradually improve both the quality and quantity of his crops. Similar results will follow a careful selection of tubers or seeds for roots. The proposition, "if it is a root of its kind, it will do for seed," will no more do to stand by than "sowing as it comes."

The Wool Clip of 1868.

The wool clip of California last year was 16,000,000 pounds. Estimating it at 20 cents, would make its total value $3,200,000. Of this total amount of product, only 2,800,000 pounds were worked up in this State. The balance found a market in the Eastern States, where it was manufactured, and a full equivalent in quantity sent here in the shape of woolen goods, at great cost to ourselves and large profit to the manufacturers.

An average of about fifty cents per pound is added to wool in the process of manufacture—full thirty cents of which is for labor alone. Hence, if we add that amount to the 13,200,000 pounds sent away, we have the sum of $6,600,000, which might have been saved to the State by manufacturing our woolen goods at home. Moreover, it is estimated that the total value of our woolen importations for 1868 reached $11,000,000; showing that we still come much short of raising the amount of wool actually consumed in this State. These facts are eminently suggestive of the future possibilities of the wool trade of the Pacific coast.

Hops.—The Willamette *Farmer* says that an enterprising Orogonian, William Wells, of Buena Vista, Polk county, is putting up his hops in half-pound packages, for sale at druggists, groceries, etc. The idea is a good one, as large quantities of the article are sold in small packages, at high prices. This is but one of the many evidences that our people are learning how to prepare their products in such a manner as to take every advantage of the market.

A Farmers' Club in Santa Cruz.

It is only by a union of effort that important works are accomplished. So, to effect any substantial modifications in our systems of education or of labor, we must resort to a multiplicity of devices. If we would improve our modes of farming, there is no *one* thing which will do it. Neither books alone, nor agricultural papers, nor colleges, nor lectures, nor fairs, nor farmers' clubs, can effect the desired reform, however much it is needed. We must bring all of these things to bear. They are all excellent in their way for the dissemination of knowledge, through which alone any important progress can be made in that direction. But we think the value of some of these aids are under estimated, and among that class we would place farmers' clubs. We know of but few ways in which the people of any given agricultural neighborhood can be more profited than by such organizations.

We have been led to these remarks by noticing the efforts made to establish a farmers' club at Santa Cruz. A preliminary meeting was held at the Court House in that town on the 6th of November, which was organized by electing Martin Kinsley, Chairman, and John W. Morgan Secretary, at which a committee of three was appointed to draft a constitution and by-laws and report at a future meeting. The club has since been fully organized, as follows: J. S. Mattison, President; J. Woods, Vice President; John W. Morgan, Secretary; Martin Kinsley, Treasurer.

Some special question will be agreed upon for discussion at each regular meeting; after which, general remarks and suggestions will be in order, much, we presume, after the manner of conducting the farmers' club of the New York Polytechnic Institute. The first regular meeting of the club will be held this evening. Question for discussion: "Which is the most beneficial—deep or shallow plowing?" As the *Sentinel* promises to publish reports of the discussion, we shall watch them with no little interest. We notice that a number of other clubs are already in operation in different parts of the State, from which, we doubt not, much good will come to the farming interests of the Pacific coast.

Castor Beans.—This article will be planted more extensively than usual in California the coming season. The oil works establishment in this city is proving an important stimulant to those branches of agriculture upon which it depends. The castor bean has thus far done well on this coast, and many persons who have heretofore cultivated but little patches as an experiment, are now making preparations to plant several acres—ten or twenty, more or less. The oil works are holding out important inducements for the cultivation of flax, which, it has been found, can be cultivated to a profit for the seed alone. It is held that flax seed at four cents per pound is a more profitable crop than wheat at current rates; while the straw will very near or quite pay the entire expenses of the crop.

Sagebrush Lands Valuable for Agriculture and Grazing.—The *Call* of this city is informed that experience is proving that the sagebrush lands of Nevada are valuable for agriculture and grazing purposes; that a species of the wild sage which grows there in abundance is, during the winter, the finest feed in the world for cattle, being filled with rich seed; that stock thrive wonderfully; that it is the best grazing country on the continent; that the stock brought from there to California is the best in the market; that sheep driven there from California will gain twenty pounds in weight in one season, and that no soil any where produces as fine vegetables as that hitherto despised alkali country. And further, that the little valleys scattered all through the country produce the finest bunch-grass in the world.

Unsown Crops—How are they Produced?

Much has been said, first and last, with regard to the sudden and apparently spontaneous appearance of unsown crops, on a slight change in the condition of the soil—as where a field has been burnt over, or where soil which has long remained undisturbed is turned up by the plow. If we go into the midst of a dense primeval forest, clear up a little space of ground and turn up the soil, without putting in any seeds, we almost invariably witness a prolific growth of some one or two varieties of plants, entirely new to the neighborhood. The same holds true when we turn over, for the first time, the soil of the prairie.

When heath land is plowed, without seeding, the ground is always completely covered with a thick growth of white clover. When an opening in the pine barrens of the South is made, the first crop is invariably a dense growth of a certain weed. In both those cases this is true, even where no such growth has been witnessed, within many miles. Hence the transportation of seed by wind or birds would seem next to impossible. A few scattering plants might be expected; but why such an exclusive growth of plants new to the neighborhood? Why not rather look for plants familiar in the vicinity?

A still more curious fact has recently been noticed on our western plains. At stations on the line of the Pacific Railroad, on vast treeless plains, wherever the station people have fenced in and plowed up the sod, never before disturbed by the hand of man, large quantities of young trees spring up—principally *oak*—although none such, not even a solitary acorn, has been seen within hundreds of miles of such localities.

Do these grasses and weeds and trees spring from their ordinary seed; or are there other germs, of which we know nothing, capable of producing such growths? The closest search for clover seeds on the plowed heath, for the peculiar weeds in the barrens, and for acorns on the plains, as report goes, has never been rewarded with a single instance of success; although in fields sown to make such crops specialties, the seeds are abundantly discernible. The search for the clover seeds upon heath lands has been made a special effort, and never with success.

Whence come the acorns on the distant plains, in such unusual numbers? Travelers certainly do not carry them, and birds cannot. Are we to doubt the reported fact? We have numbers of scientific men, in the capacity of surveyors, engineers, etc., along the road. May the public not look to some of them for a careful investigation into these reported phenomena?

The usually accepted explanation is, that the soil is everywhere full of buried stores of seeds of all descriptions, which await only favorable circumstances of warmth, light and moisture to start them into growth; but common observation and experience teach us that none of the seeds named, and no others connected with this class of phenomena, will retain their vitality for any considerable length of time, unless kept perfectly dry, as was the wheat found in the Egyptian mummies.

The facts noticed are among those mysterious phenomena that have long puzzled scientific men, and which seem to give favor to a certain class of assumptions, the acceptance of which must destroy some of the best established facts connected with scientific research. The greater the number of facts thus far collected in relation to this subject seem to render it all the more inexplicable. Its interest and importance would amply reward a series of observations and experiments.

THE cork tree is cultivated successfully in Eastern North Carolina and in Florida.

The Cracking of Apples and Pears.

The cracking of apples and pears, and the blotches and scarifications frequently observed on their surfaces, have caused much speculation and close examination among pomologists. For a long period the opinion prevailed that such defects were due to a deficiency of certain mineral ingredients in the soil; but the various remedies proposed, based upon that assumption, have been tried, with very little success.

In the course of inquiries in this direction various examples were cited where those fruits sheltered from prevailing winds showed a decided exemption from such faults; and it is now quite generally conceded that cracking and blemishes of nearly every description are the results of fungoid growth—mildew. The atmosphere, and not the soil, is now regarded as at fault. In support of this opinion, the white doyenne, one of the choicest of pears, was cited as rarely succeeding in exposed localities, while when sheltered from the moist winds it is always produced in all its beauty and excellence.

Probably the greater immunity of apples and pears in California from this species of blight is due to our naturally dry atmosphere; and affords additional proof of the correctness of the conclusions of our Eastern pomologists.

How to Fit a Collar to a Horse

The collar is too often quite unfit for the horse. It should not be too big nor too small; but it should be fitted closely, and well padded, with a smooth and plain surface. It is a sin and a shame to compel a horse to draw heavy loads with bleeding and running sores under their collars, and if you will only properly fit the collar to your horse there is no need of such cruelty. The *Harness and Carriage Journal* tells you how to do that thing, as follows: "The plan adopted in the West, and which, we are assured by men who have been long in the collar business, does not injure the collar in the least, is to dip it in water until the leather is thoroughly wet, then put it on the horse, secure the hames firmly, keeping it there until it becomes dry. It is all the better if heavy loads are to be drawn, as that causes the collar to be more evenly fitted to the neck and shoulders. If possible, the collar should be kept on for four or five hours, when it will be perfectly dry and retain the same shape ever afterward, and as it is exactly fitted to the form of the neck, will never produce chafes or sores on the horse's neck."

JOHNSON'S PATENT PORTABLE FENCE.—This recent California invention, which seems to be a practical one for many purposes, is meeting with favor. Mr. R. B. Woodward, who has tested it in his famous pleasure gardens, in this city, writes the inventor in the following words: "I take pleasure in informing you that your patent portable fence gives me perfect satisfaction. I am using it as corrals in my public gardens in this city, and intend using it on my ranch in Napa Valley, as I find it answers my purpose well."

LOSS BY INSECTS.—It is estimated by the *American Entomologist* that, on an average, the United States suffer annually the loss of $300,000,000 from the depredation of insect tribes. From what source it derives data upon which to base these estimates is not stated. They may, however, not be far out of the way, when we consider how vast is the throng of insects which prey upon the vegetation. Locusts, grasshoppers, Hessian flies, cut cotton and army worms, yearly make sad inroads upon the products of the soil. And whoever can invent any appliances for checking the ravages will indeed prove a public benefactor.

A PITCHING MACHINE has been invented in England for the purpose of pitching sheaves of grain into a loft or on to a stack. It is stated that the machine will perform the work of six men. This would be a very useful machine in the large grain fields of this State about harvest time.

Profits of Farming in Stanislaus.

We summarize the following "Immigrant Aid" document from the Tuolumne City *News:*

Grain raising in Stanislaus county is more profitable than in any other portion of the United States. Our people can stand lower prices for grain than other farming sections; in case prices should be reduced to rates much lower than they have been, there would still be a margin for our farmers. Here are our reasons for these assertions: First, our grain-raisers farm without fences, which is a saving of many thousands of dollars. Second, the peculiar soil of our valley—light and sandy—admits of its being plowed at almost any season for about half the price required in other sections. Third, the grain raised, especially wheat, is of a superior quality, by reason of the admirable climate of the valley—free from heavy dews and fogs.

From inquiry, we find the following are the usual prices per acre for cultivating and harvesting: Cost per acre for plowing, $1.25; cost of seed, say 50 cents; for sowing and harvesting, 75 cents; heading this grain and stacking, $1.25. Thus the grain in stack has only cost $3.75. The last crop, a poor one, averaged fifteen bushels per acre. Allow seven cents per bushel for thrashing, and we have an additional $1.05 per acre to add, making in all $4.80. Thus it will be seen that the farmer's fifteen bushels, or 900 pounds of grain, has cost him only $4.80. If the farmer is a practical man, owning his own implements and teams, the greater portion of this cost can be saved, as 300 acres is the amount set apart to be cultivated by each laboring man and team of eight small horses. From these facts we contend that our farmers can live and grow rich at prices which would reduce those in more unfavored localities to want and beggary.

Will Grapes Mix?

A writer in the *Hearth and Home* writes as follows upon the mixing of different varieties of grapes: "Every farmer knows that if two varieties of corn are planted near each other, a mixture will be the result, and it can be distinctly seen the first season. If this be true with corn, it may be asked, why is it not so with grapes? It may be that they will mix, but the mixture is not apparent in what we call the fruit—that is, the pulp surrounding the seed.

Corn is an annual, and grown from the seed each year, while grape-vines are perennial, and not grown from seed, except when new varieties are desired. Suppose we plant a row of sweet-corn by the side of our common field-corn, we will be very likely to find grains of the latter mixed with the former, provided the two sorts bloom at the same time; but the husk that surrounds the ear of the sweet-corn will not show the least mixture; and our Concord grape, which may have been fertilized with pollen from a Delaware, will show no signs of this impregnation; but should we save the seeds and sow them, the plants raised would certainly give evidence of being a mixture of the two sorts.

Two varieties of fruits may grow side by side for all time without mixing; but the offspring of either, if the parents belong to the same species, may be a mixture of the two sorts, provided cross-impregnation actually took place. For all practical purposes, grapes may be said not to mix when grown in close proximity.

WILL BROOM-CORN AND SORGHUM MIX? The *Hearth and Home* answers the above question as follows: "Broom-corn, as well as the different varieties of sorghum, imphee and Guinea corn are now all considered as but varieties of the *Sorghum vulgare*, or Indian millet, the durra or doura of Africa and India. They will all intermix, one with the other, if grown near each other; but will not intermix with the *Zea mays*, or Indian corn—that being of a different genus."

PRESERVING EGGS—THE LATEST "METHOD."—Mr. Violette says that linseed oil, rubbed on the egg, is the simplest and best preservative. Any oily or other substance that will prevent the access of air to the interior of the egg will preserve it for an almost indefinite length of time. It is more than probable that the peculiar properties of linseed oil (boiled, we suppose) will accomplish this end.

San Francisco Market Rates.

Wholesale Prices.

	FRIDAY, December 17, 1869.
Flour, Extra, ₱ bbl	$5 00 @ $5 50
Do. Superfine	4 25 @ 4 50
Corn Meal, ₱ 100 lbs	2 00 @ 2 25
Wheat, ₱ 100 lbs	1 15 @ 1 65
Oats, ₱ 100 lbs	1 15 @ 1 50
Barley, ₱ 100 lbs	1 00 @ 1 25
Beans, ₱ 100 lbs	2 50 @ 3 50
Potatoes, ₱ 100 lbs	75 @ 1 00
Hay, ₱ ton	10 00 @ 18 00
Live Oak Wood, ₱ cord	9 00 @ 14 00
Beef, extra, dressed, ₱ lb	7 @ 9
Sheep, on foot	2 50 @ 3 00
Hogs, on foot, ₱ lb	5 @ 5½
Hogs, dressed, ₱ lb	8 @ 9

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@	15
Do. China	10	@	11
Coffee, Costa Rica, ₱ lb	18½	@	19
Do. Rio	18½	@	19
Tea, Japan, ₱ lbs	75	@	90
Do. Green	60	@	1 25
Hawaiian Rice, ₱ lb	9½	@	10
China Rice, ₱ lb	5½	@	6
Coal Oil, ₱ gallon	62½	@	65
Candles, ₱ lb	16	@	18
Overland Butter	30	@	42
Ranch Butter, ₱ lb	40	@	50
Isthmus Butter, ₱ lb	25	@	40
Cheese, California, ₱ lb	16	@	20
Eggs, ₱ dozen	50	@	55
Lard, ₱ lb	14	@	15
Hams and Bacon, ₱ lb	17	@	19
Shoulders, ₱ lb	10	@	12

Retail Prices.

Butter, California, fresh, ₱ lb	50	@	60
do. pickled, ₱ lb	40	@	50
do. Oregon, ₱ lb	25	@	30
do. New York, ₱ lb	40	@	50
Cheese, ₱ lb	20	@	25
Honey, ₱ lb	25	@	30
Eggs, ₱ dozen	50	@	65
Lard, ₱ lb	20	@	22½
Hams and Bacon, ₱ lb	22	@	25
Cranberries, ₱ gallon	1 00	@	1 25
Potatoes, ₱ lb	2	@	3
Potatoes, Sweet, ₱ lb	—	@	2
Tomatoes, ₱ lb	2	@	3
Onions, ₱ lb	3	@	5
Apples, No. 1, ₱ lb	4	@	5
Pears, Table, ₱ lb	5	@	
Plums, dried, ₱ lb	10	@	12
Peaches, dried, ₱ lb	10	@	15
Oranges, ₱ dozen	50	@	75
Lemons, ₱ dozen	—	@	1 00
Chickens, apiece	75	@	1 00
Turkeys, ₱ lb	—	@	25
Soap, Pale and C. O		@	12
Soap, Castile, ₱ lb		@	20

Importance of Well-Ventilated Dairy Stables.

Mr. L. B. Arnold assures the *Country Gentleman* that odors inhaled by cows will affect their milk. In June he lost a calf, the carcass of which was placed where northwest winds carried the stench over his pasture. It was soon found that the milk was tainted or pure as the wind changed. The cause being traced and removed, the trouble ceased. In another case, dead horses in the cow pasture caused serious loss to all the patrons of a cheese factory.

This is rather a novel idea, and we should be loth to believe that odors had the power of affecting the milk in a cow in the manner here attributed to it without some further proof than this single instance affords. There can possibly be no more disgusting odors than frequently arise from filthy stables; yet, bad as they may be, and injurious as they no doubt are to the general health of the cattle, we have never before heard of such a direct and immediate injury to the milk therefrom. But as to the milk itself, after it has been drawn from the cow there is no doubt but that it is easily tainted by bad smells. We have known milk to have a taste of turpentine, from the presence of a new pine board near the milk pan in the spring house; and to much care cannot be given to guard against these things by those who would have perfection in the dairy art.

THE CATAWBA GRAPE DISCARDED.—The Catawba seems to be losing favor in the Mississippi Valley. At a late meeting of the Horticultural Society of Alton, Ill., a motion to "wipe out the Catawba grape as a worthless rotten thing" was passed, three to one; but not without sundry emphatic protests by some of the minority members.

TREE PLANTING IN AUSTRALIA.—It is said that no less than 7,523 plants were distributed in one month by the curator of the Botanical-gardens, Geelong, to the various public recipients, making a total for the year of 53,751. Among the applications was one from the engineer-in-chief of railways, for trees to be planted at the Werribee and other stations on the line.

THE PLOW.—It is not known where he who invented the plow was born, or where he died; yet he has effected more for the happiness of the world than the whole race of conquerors who have drenched it with tears and manured it with blood.

THE CORN CROP.—It is believed that the corn crop of the country has fallen off about one-fifth the past year. The crop of 1868 was 800,000,000 bushels.

Mining and Scientific Press.

W. B. EWER.....Senior Editor.

A. T. DEWEY. W. B. EWER.

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San Francisco:

Saturday Morning, Dec. 18, 1869.

Notices to Correspondents.

M.—Mining, as distinct from Mining Engineering, must be considered an industrial pursuit, the same as farming; and a miner is a laborer, as is a farm hand. He is not a mechanic, unless incidentally.

M. A. H., Clarksville.—The matter alluded to by you was really a step taken outside of our usual course. It is not the mission of our journal to discuss religious subjects, either seriously or otherwise.

Forty-niner, Placerville.—Your communication will appear next week.

"What are Metals?" by E. P., next week.

California Views and R. R. Scenery. While in Sacramento recently, we visited the photograph gallery of A. A. Hart, an artist who has gained much favorable reputation by his numerous and well executed views of scenery on the C. P. R. R. Mr. Hart's stereoscopic views doubtless exceed in number those of any other artist on this coast. They are very attractive, and show an aptness in the choice of position and location by the artist. The variety of pictures with which his gallery is stored, results from great activity and quickness of perception on the part of the artist, whose works are likely to become widely known and extensively patronized.

New Books.—We have just received from A. Roman & Co. the following books, which we shall notice further soon:

"Useful Information for Railway Men." Compiled for the Ramapo Wheel and Foundry Co., by W. G. Hamilton. Price $2.

"The Polar World: A Popular Description of Man and Nature in the Arctic and Antartic Regions of the Globe." By Dr. G. Hartwig.

Foreign Crop Statistics.—Mr. Sargent has prepared and introduced a bill in Congress to provide for quarterly reports from our Consular agents abroad of the condition and prospects of such crops as come into market competition with our own agricultural products. We are pleased that our Representative has undertaken to get the action of Congress in the matter.

The First California Beet Sugar.

We have frequently alluded to the preparations in progress in Sacramento for the manufacture of beet-root sugar, and are now enabled to state that the first experiment has already been successfully made. On the 10th instant 150 pounds of crystallized sugar was produced at the works, under the direction of Mr. Wadsworth, the amount being decidedly in excess of what was expected from the quantity of syrup employed. The machinery in use was very rude—merely experimental, and designed simply to prove the practicability of the process, and to show the stockholders that there was no difficulty in obtaining a reasonable amount of crystallizable sugar from the juice of California raised beets. The fear has been that the large amount of alkali prevalent in most California soils would seriously interfere with the crystallizable qualities of the syrup produced therefrom. The successful issue of this preliminary trial seems to have settled this point satisfactorily, and we presume adequate machinery will soon be put in operation for the more extensive and perfect manufacture of the beets and resulting syrup before it reaches the point where the refining of ordinary sugar properly commences. The expense of this portion of the machinery is quite small, and the process simple. A revolving cylinder washes the beets, and revolving knives cut them into very thin ribbons, which are macerated for a short time in cold water, for the purpose of extracting their saccharine matter. Lime is then employed to extract the bitter principle, and carbonic acid is afterwards used to precipitate the lime. The after processes of filtering, evaporating in the vacuum pan, straining, crystallizing, etc., is almost or quite identical with those employed in refining cane sugar.

If this establishment should prove a continued success, others will follow in different parts of the State, and it is by no means impossible that the cane sugar refineries in this city may yet find it for their interest to fall back upon beets, for which their present machinery is equally applicable, and thus add largely to the productive resources of the State.

New Mineral Discovery.—We learn from Mr. C. Stott, who recently arrived here from the Yellow Pine district, Nye county, Nevada, in the Mountain Spring range, about 130 miles northeast of Camp Cady, that that region presents a fine and extensive field for mining operations. Mr. S. brought with him 160 pounds of ore, forty pounds of which was worked by Charles Pletz & Co., No. 36 Fremont street, yielding 625 pounds of lead to the ton of ore, and $55 in silver. The ore was taken from the Excelsior mine, which shows a vein of four feet in width on the surface. Mr. Stott, the discoverer of this mine, informs us that wood and water are abundant and convenient to the mine. This is a new district, and the Excelsior is the first company incorporated.

Foundry Work in Sacramento is quite dull at present. Messrs. Williams, Root & Nelson, of the Union Foundry, are making an additional large sized drill for these works, preferring their own make to imported tools. They are also about erecting a new furnace, and making other improvements in the shop. This firm did a lively business last year in steamboat work, mining machinery, iron buildings, repairing agricultural machinery and general job work.

Relief for Mining Counties.—A bill to relieve embarrassed mining counties has been introduced in the Assembly by Mr. Mooney. It appropriates $15,000 from the State Treasury to pay bonds issued for the construction of the Tuolumne and Mono wagon road. It was referred to the Committee on Claims.

A Pacific Coast Triumph—Ogden the Point of Junction.

The fact that the junction of the two Pacific Railroads has been fixed at Ogden is a matter of importance not only to the railroads themselves, but also to the whole Pacific coast. In the contest between the Union and the Central roads, each company had run its grades from Ogden on the east to Humboldt Wells on the west—a distance of some 225 miles. Moreover, the Union laid its track to Promontory, while the Central obtained the bonds up to Ogden. The dispute has been carried on for a long time, the Union Pacific claiming that Promontory, the Central Pacific that Ogden, should be the point of junction. Finally, however, a compromise has been effected, and the Union Pacific has yielded up the fifty-five miles of road between the two places.

This is an immense gain for the Central Pacific Company and for this coast. Promontory is on the top of a high mountain in a desert, where there is no water, nor fuel of any kind. Ogden is in the center of a new valley, where water is plenty, and close to where good coal bed exist. It is the natural distributing point for the vast interior contiaent—southward through the rich valleys of Utah to the Colorado, and northward to Idaho and Montana. The fact that from it radiates the easiest grades for railroads and wagon roads north and south was long known to the Mormons, and the two railroad companies spent over half a million of dollars in surveys, which simply resulted in proving the same truth. Had the Union Company succeeded in holding the fifty-five miles of road between Ogden and Promontory, it would have held the balance of power at the great interior distributing point of the continent, and the Central Company would have been glad to have sold it that portion of its line between Promontory Point and the Truckee river. Having succeeded, however, in securing the disputed territory, the latter company has the vantage ground, and thus assures this coast of a position equal, if not superior, to the Atlantic coast, as a feeder of the manufacturing and other wants of the Great Interior Basin.

Another advantage has been found. Should the Union Pacific road be found liable to serious winter interruption, the Central Pacific can make connection (by means of the line which Brigham Young is now building southward through Utah towards the Colorado) with the main southern Pacific line, when the latter is built, which certainly will be within ten years. So that, while the Central Pacific is on the present great trans-continental highway, it can have a southern connection as well.

These are great and permanent advantages—advantages of the greatest value to the Central Pacific road, but advantages more signal, because more general, for the entire Pacific coast.

The Central Pacific Company intends to stop using the slight trestle work which the Union Pacific Company built on portions of the disputed territory, to improve the road, and lay a double track on the most of it, thus facilitating travel and rendering accidents much less likely to occur.

It now seems certain that Ogden will become one of the leading towns of the interior.

The Regents of the University of California have wisely decided to abolish all admission or tuition fees after the 6th of April, 1870, making the instruction in all department absolutely free to all students, who are to be admitted, if properly qualified, from other states and countries as well as from California.

In our list of members of the Legislature, copied from an exchange, the name of Hon. P. C. Appling, of Fresno county, was misprinted.

The Occurrence of Thenardite in Nevada.

A couple of weeks ago a paragraph was published in all the papers to the effect that twenty-five tons of carbonate of soda had been sent to Virginia City, and that unlimited supplies of the article abounded in the State.

After transporting the substance in question, instead of before, specimens were sent to San Francisco for analysis, and it was found that the article was Thenardite or anhydrous sulphate of soda, a mineral which is at present of no practical utility, and which has not before been known to exist on the coast. We are indebted to Mr. Henry G. Hanks, of this city, for the following description:

The specimen examined was in the form of a crystalline crust, nearly an inch in thickness, remarkably heavy and dense. Luster, vitreous. Color, nearly white, with a slightly bluish tinge. Hardness, 2·5. Translucent. Crystalline faces slightly efflôresced. The mineral blackens slightly in a closed tube, gives a trace of water only, and melts without other change. On platinum foil it fuses quietly, and cools to a white opaque crystalline mass; in the platinum forceps, colors the flame deep yellow.

It is soluble in water without residue. The solution slowly evaporated gives uniform needle crystals to the last mother liquor. The addition of acids to the solution does not cause it to effervesce, nor is there any perceptible change. A heavy white precipitate falls when the aqueous solution is heated with chloride of barium.

A qualitative analysis failed to detect any other base than soda, with a *trace* of magnesia, or any other acid than sulphuric, with a trace of chlorine. The absence of water and of lime distinguishes it from glauber salt and glauberite.

Large quantities of this mineral are said to occur on Walker river, the exact location not being given. The only localities given by Dana are Spain, Bolivia and Peru.

Pictorial Advertising.—Mr. A. A. Hart, photographer, at Sacramento, has adopted a novel mode of advertising by placing large photographs of grand scenery in mammoth frames, containing, besides dial plates indicating the time-table of different railroads, small views and business cards in alternate sections. These frames placed in large saloons are viewed with interest at first sight by all persons, and are constantly being stared at by strangers. Mr. H. contemplates issuing 100 frames, each containing different views. He will soon visit Chicago, and thus place some of his grandest views of California scenery on public exhibition.

The Kentuck Mine Still Burning. A party of miners at work just over the 700-foot level in the Kentuck mine encountered a quantity of carbonic acid gas, on Wednesday last, by which they were badly asphyxiated. Two or three were rendered for a time insensible. The entire party was brought to the surface and were all resuscitated in a few hours.

A New Paper.—We have received the first number of *The Pioneer*, published by the Pioneer Agency, at Helena, Montana, and devoted to "insurance, real estate, and the interests of Montana." The paper presents a remarkably neat and pretty face.

The Pacific Straw Works, No. 535 Bush street, S. F. (mentioned in the Press last week), have ten presses, capable of turning out 200 dozen buckram frames per day.

Real Estate Business in Olympia, W. T., is said to be flourishing, and our friend, Hon. E. L. Smith, late Secretary of that Territory, is recommended by the *Tribune* as the best agent in the field.

Rope Making in California.

THE MATERIALS

Used for ropes are chiefly hemp, the Manila plantain leaf, and a few other vegetable fibers, and flax for lines. The fibers being short, must be overlapped and compressed to form a strong article. The compression is best obtained by twisting, the fibers being drawn out together in the proper quantity to produce a suitable size of yarn; these yarns are put together to form strands, and three or four strands are twisted together to form a rope. These successive steps cause a strain to be more equally diffused than if the fibers were put together at once and twisted, and, moreover, the alternating directions which are given to the twist, cause the different portions to bind on themselves and form a permanently firm bundle.

We propose to take our readers to-day out to the Potrero, and show them what is being done in this line in our city. Allow us first to introduce to you Messrs. Tubbs & Co., the enterprising proprietors of the

SAN FRANCISCO CORDAGE WORKS,

Which we are to visit. (These works were erected in 1856, since which time they have been greatly enlarged.) Mr. W. L. Spinney, gentlemen, superintendent of the factory, and Mr. W. Anderson, engineer, under whose supervision the fine Corliss engine, which supplies all the motive power, was set up. It being Saturday, Mr. Spinney is very busy, but Mr. Anderson will show us what is being done. We go first to the

DRAWING AND SPINNING DEPARTMENT,

Where we see the bales of "Manila" just imported and landed at the company's wharf. This Manila is the fiber obtained from the leaves of a species of wild plantain which grows in the Spice and Phillippine Islands in great abundance, and is not, therefore, a true hemp. The hanks, you observe, are cut to a proper length, moistened with oil and weighed in batches of five to eight pounds, according to the size of the machine—the "lapper"—to which it goes first. A batch is fed into rollers and passed into the lapper, which revolves a moment and then is stopped, and which, as the workman removes the hemp, appears to be a wheel of some six feet in diameter, with its circumference thickly studded with long steel teeth. These, as the wheel has revolved, have straightened out the fibers of the raw material and drawn it out into a "lap" some eighteen feet long. The lap is passed through the machine once more, and then goes to the "drawing frame." If you are mathematically inclined, you will have observed that there are eight lappers, and will have found, by inquiring, that some thirty-five bales of hemp, averaging 275 pounds apiece in weight, are worked up daily.

The *first* drawing frame is called a "splicer," and to the uninitiated eye looks like the others. The machine consists essentially of, 1st, a pair of feeding rollers; 2d, a long endless apron made up of horizontal slats fastened on to bands, which revolve over rollers placed at the two ends of the machine, each slat being provided with a row of long teeth which catch the hemp and pass it on to, 3d, the fluted discharging-rollers. The last revolve *more rapidly* than the apron, and, therefore, draw out the fiber through the apron-teeth into a narrow band. The man who feeds lays one end of a "lap" over that of the preceding, and thus we obtain from the discharging-rollers one long band of fibers, combed and straightened out, which is discharged continuously into cans. Several of these bands of "roping" are fed together into another "drawer," and drawn out still longer, and then passed to a third machine. The result, then, of the lapping and drawing is, that our original bundles of hemp are now thoroughly combed and straightened into one continuous "roping" of a proper size to be spun into "yarns."

The spinners, or "jennies," are similar to those used in cotton mills, and are of too complicated mechanism to be described here. They take the ropings and twist them loosely into "yarns," at the same time winding the yarns upon bobbins. The bobbins are slid through an inclined trough into the

ROPE WALK,

Where they are placed upon upright spindles, arranged upon a frame-work in such a manner that any number of yarns may be drawn off and twisted into a "ready" or strand. We presume that you have previously visited rope walks, and are generally acquainted with the complicated machines used. Suffice it, then, to call your attention to the way in which several yarns from the bobbin-frame are passed through the holes in this steel disk, thence through the bore of a fixed steel tube, the size of the bore regulating the size of the strand, and then fastened to a hook of this hauling machine. As the machine retires slowly down the walk, the hook revolves around the axis of its shank, and thus the yarns are twisted to a "ready."

The readies being cut into the proper lengths for the rope to be made, are laid upon cranes placed at intervals along the length of the walk. At one end they are attached to the revolving hooks of a machine which twist or "harden" each ready. At the other end three or four readies pass through deep grooves cut into the "top," a conical wooden block attached to a movable car,—the "top-sledge,—and then are fastened to a "laying machine" which revolves in an opposite direction. A so-called "tail-rope" is fastened at one end to the top sledge, and wound around the rope-to-be, just behind the top, while the other end is held by the rope-layer, who walks behind the car. The readies having been sufficiently "hardened," the laying machine is revolved, and thus the sledge is forced up the walk, its speed, and, therefore, the tightness with which the rope is wound, being regulated by the force with which the rope-layer holds the tail-rope. This tail-rope, then, acts similarly to the tube placed near the steel disks in making the readies. The finished rope is rolled into coils, tied up, and is ready for the market.

In the spinning department there are several "stationary laying machines," which, in one operation, spin the ropings into yarns, twist the yarns into readies, and lay the readies into ropes. But the article thus manufactured is not so strong and durable as that which comes from the rope walk.

At this establishment all sizes of ropes are made, and the walk being 1,500 feet long, this length of rope can be obtained. Most of the cordage manufactured is for mining and agricultural purposes. We understand that there is an order for hoisting rope of a length of 2,000 feet for Hayward's mine. Some sixty-five men are employed, who work, however, only during the day. The capacity of the mill, which now turns out a couple of million pounds of rope annually, can therefore be doubled by having a night shift.

Thanks, gentlemen, for your kindness in showing us your works. When we locate our mine or build our ship, we shall know where to obtain our cordage, and if the cares of life press too heavily on us, and we determine to "suspend" ourselves, we shall apply to you for a rope of the requisite strength.

KELSEY'S NURSERIES.—We have received the proof sheets of a descriptive catalogue of Kelsey's Nurseries, Oakland, which gives a very extensive list of fruit trees, vines, plants, ornamental trees, shrubs, roses, flowering plants, etc., together with some hints as to the culture and treatment of the same.

Pacific Coast Inventions.

New Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING DECEMBER 7TH.

WIND WHEEL.—Leonard Fischer, Sonora, Cal.

GANG PLOW.—Dennis Henry Gleeson, San Leandro, Cal., assignor to himself and Dennis Gannon, same place.

TUCK-CREASER FOR SEWING MACHINE.—John H. Mooney, San Francisco.

SEAT FOR CHAIRS, SOFAS, ETC.—Frederick Wittram, San Francisco.

MACHINE FOR JOINTING STAVES.—Lamartine R. Fulda and Martin Fulda, San Francisco.

FASTENING FOR NECKTIE.—Harry M. Heiueman, San Francisco.

WATER CLOSET.—John B. Hobson and John Middleton, Jr., San Francisco.

GANG PLOW.—Byron Jennings, Gilroy, Cal., assignor to himself and Henry W. Briggs, same place. Antedated Dec. 1. 1869.

WATER WHEEL.—Henry P. McCleave, Tomales, Cal.

FLEXIBLE PIPE COUPLING.—Quartus Rice, Nevada, Cal.

HORSE HAY RAKE.—William Sharkey, Chico, Cal.

HANGING WINDOW SHADES.—John I. Tay, Oakland, Cal.

MEANS FOR HANGING WINDOW SHADES.—John I. Tay and Lodowick L. Sawyer, Oakland, Cal.

PEN.—Addison G. Waterhouse, San Francisco. Antedated November 25, 1869.

Recent Patents.

MACHINE FOR JOINTING STAVES.—L. R. and Martin Fulda.—By the use of this machine the staves of barrels, tanks and casks of all sizes can be given the proper bilge and bevel on one or both sides at once, and with or without bending. This is particularly useful for very large work where the staves are very thick and cannot be bent without steaming. The machine consists of two saws, planes or other cutters, mounted on carriages opposite to each other, and moving back and forward transversely to the motion of the stave and its carriage. These cutters stand at a variable angle to the stave and to each other, and in moving back or forward their carriages also move in a corresponding curve, so that the bevel of either wide or narrow staves will lie in radial planes of the proposed cask. The stave carriages descend each way from the center, thus giving the stave the proper shape, while the angle of the cutters gives the proper bevel. The inventors are practical coopers and well-known business men in that line.

HORSE HAY RAKE.—William Sharkey, Chico, Cal.—This invention relates to revolving rakes attached to sulkies or other vehicles, and consists in constructing the frame of the sulky or wheeled vehicle of sufficient length to allow the rake to be worked between the wheels and the horse, and in attaching the rake to the frame of the vehicle in such a manner that it can be easily worked in the above-named position. A device is also attached, which is operated by the foot of the driver, and by which the teeth of the rake may be raised so as to pass over any uncut or fouled grass which may be in the way. The rake being before the wheels, enables the driver to see and control its working. It is simple in construction, and being made almost entirely of straight timber, any part can easily be replaced.

IMPROVED WINDMILL.—William I. Tustin, San Francisco, Cal. This invention consists in constructing the wheel which carries the vanes and the rudder in two separate parts and uniting them together by a suitable turn-table, so that the wheel can be turned about to stand at any required angle to the rudder so as to regulate the speed by causing the wind to strike the rails or vanes in the direction or at the angle requisite for producing the desired speed. It also consists of a device which is attached to the lower end of the vertical shaft which supports the wheel. This device is connected with the turn-table by a rod, by means of which the wheel may be turned to any angle required by means of cords, within easy reach of a person standing upon the ground.

GANG PLOW.—This invention consists in an improved manner of operating the plow frame, in order to raise it and clear the plows from the ground, and also in the manner of attaching the frame to the trucks, so that the operation of raising and lowering the frame is simplified, and the amount of power required is reduced. Mr. Jennings is residing at San José at present, where he may be addressed for further information.

WIND WHEEL.—Henry P. McCleave, Tomales, Cal.—By the triangular form of the vanes, and by bending one of the outer corners of each vane down towards the center, where the third corner is secured, the efficiency of the wheel is much increased—being more simple and stronger than the ordinary wheel.

MEANS FOR HANGING WINDOW SHADES. John I. Tay and L. L. Sawyer, Oakland, Cal.—This is an arrangement for lowering the shade from the top or elevating it from the bottom, so as to have it in any desired position—the whole presenting a neat and tasteful device.

HANGING WINDOW SHADES.—John I. Tay, Oakland, Cal.—An improvement on a former device which has been previously noticed and illustrated in the PRESS.

New Rotary Steam Engine.

The Nevada *Transcript* gives the following description of a new California invention: "We saw yesterday, at Stiles' mill, the newly-invented steam wheel or engine of Parkinson & Fisher. It is the most compact and complete thing in its construction we have ever seen, and is so simple that it may be taken apart and put together in fifteen minutes. The entire thing is about the shape of a cheese box, and is only thirteen inches in diameter and four inches in width. Inside of this is a close-fitting wheel ten inches in diameter, on the outer circumference of which are three sliding valves, equi-distant from each other. The space between this wheel and the outer shell is occupied one-third by a steam chamber, one-third by an exhaust space, and in passing upon the last third in a circular inclined plane. The latter closes the valve as it comes opposite the pipe where the steam is let in. At this point the steam passes through a hole under the valve, forcing it out, and the full force of the steam is applied, until another valve is brought under the pipe, where it is in turn forced out, and the steam in front of it passes out to the exhaust pipe. From this latter part the incline gradually presses the valve until it is flush with the periphery of the wheel, where it is again forced out to do its work. The wheel runs with great rapidity and has immense power, while the friction is much less than in an ordinary engine. This little wheel is running two lathes and other machinery in the shop, besides furnishing power for turning the cylinder of a steam engine. The tests, so far, have given general satisfaction; but it has been found that steel must be substituted for cast iron for the valves. This has already been done, and the engine may be seen at work at the mill of W. C. Stiles. Machinists who have examined it are confident that it will answer the purpose for which it is intended. The machine may be used either with steam or water power."

RAILROAD LANDS.—In the House of Representatives a resolution has been passed directing the Secretary of the Interior to suspend the order opening the lands reserved for the Southern Pacific Railroad to private entry until further legislation by Congress. The object of the resolution was to guard against further land-grabbing on a large scale.

AUSTRIAN EMIGRATION, which, until recently, has generally found its way to Brazil, is now being directed into the northern portion of the Southern States. A large company has recently located in Henrico county, Virginia, where they will occupy a territory by themselves. They bring with them their own mechanics, and a priest to look after the religions interests of the colony. It is said that these emigrants are greatly delighted with the climate and soil of the country, and that we may eventually look for millions of that class of emigrants from Australia, Italy and Spain.

ROAD STEAMERS IN PARIS.—One of Thomson's road steamers has been for some days,—says *Engineering* for Nov. 19th,—running through the streets of Paris, dragging a heavy omnibus, with fifty passengers. The Government has granted permission to run over two routes, one of which includes some of the busy parts of the city. The engineers declare it more manageable than horses, and safer for the public. The rubber tires save both machinery and roadway. The speed is that of a fast omnibus.

ORIGIN OF THE BANKS OF NEWFOUNDLAND.—It is said that the Grand Banks of Newfoundland owe their origin to the detritus which is brought down from the polar continents upon the ice fields which make their way through Davis Straits into the warm current of the Gulf Stream, where they become disintegrated and drop their loads into the ocean. If the Atlantic Ocean should be dried up, these banks would present a huge mountain of gravel as high above its eastern valley as Mount Blanc is above the plains which surround it.

TO REMOVE THE TASTE OF NEW WOOD. A new keg, churn, bucket, or other wooden vessel, will generally communicate a disagreeable taste to anything that is put into it. To prevent this inconvenience, first scald the vessel well with boiling water, letting the water remain in it till cold. Then dissolve some pearlash or soda in lukewarm water, adding a little lime to it, and wash the inside of the vessel well with this solution. Afterwards scald it well with plain hot water, and rinse it with cold water before you use it.

PRODUCTS OF THE VINE.—Distilleries, small and large, running mostly upon this year's grape yield, are shipping little to San Francisco just now. The demand for home consumption and points in the interior is constantly increasing. Los Angeles wine shipped to New York is competing successfully with foreign products. Favorable legislation will wonderfully advance such interests, and help the development of the latent resources of our whole wine-producing region.

IT is the law in Japan that no fir or cypress tree can be cut down without the permission of a magistrate, and for every full-grown tree that is felled a sapling must be planted.

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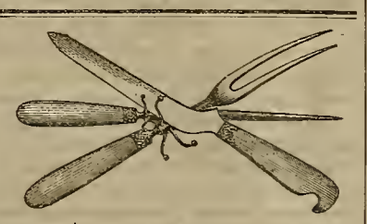
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As an indication of the Prices, we will quote one Watch from our list. The P. S. BARTLETT, Lever Movement, with Extra Jewels, Chronometer Balance, Patent Pinion, Patent Dust Cap, and all the other late improvements, in a Solid Coin Silver Case,
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All the other kinds, both gold and silver, in the same proportion. Do not order a Watch till you have sent for a Price List, as it contains a great deal of information regarding these Watches that will enable you to make an intelligent selection. Don't forget, when you write, to state that you saw this advertisement in the MINING AND SCIENTIFIC PRESS, and you need not put in stamps for return postage. Address in full,
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I. W. RAYMOND, Esq., T. R BUTLER, Esq., B. C. HOWARD, Esq., San Francisco.
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Cash Capital, - - - - - - - $300,000
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All Losses paid in U. S. Gold Coin.
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H. C. SILSBY & CO.,
MANUFACTURERS OF
ROTARY STEAM FIRE ENGINES,
Hose Carriages, Reels and Carts, Power, Bronzo and Hand Pumps.
No. 133 La Salle Street, - - - - - Chicago.
Established at Seneca Falls, N. Y., in 1845. 11v19-3m

Auction Notice.

We will sell at Public Auction, to pay storage and charges, the following described Merchandise, at Battery Street Warehouse, 819 Battery street, on MONDAY, DECEMBER 27, 1869:

	NAMES.	AMOUNT.
2 cases	E. J. Swift	$63 00
5 bdls. brackets	H. Chapman	69 50
3 cases	E. G. Whitcomb	132 00
2 bags quartz	Geo. Roberts	39 50
1 tub & cont's; 1 bag	C. S.	41 00
1 sack ore	John Nightingale	38 50
1 ½ cask	F. C. Belden	37 50
1 case	Capt. J. Porter	37 50
1 sack rock	J. M. Buffington	36 50
1 case	J. F. Sherwood	36 50
1 firkin	B. O. C.	36 50
6 sacks quartz	E. M. R.	61 1
1 sofa frame; 3 pkgs.	W. L. Needman	33 50
1 box (H. P.)	H. Palmer	36 60
1 case (J. M.)	J. Mosheimer	36 25
1 sack cement	McDonald	33 50
1 sack rock	H. A. Gleson	36 50
1 keg wine	Witts	34 50
1 cask	A. B. Earle	51 30
1 lot traps	Mrs. Carpenter	62 25
1 case	W. Kronse	31 50
1 tierce	N. Williamson	33 00
1 bale sacks	J. M. S. Taylor	31 50
1 sack rock	E. N. Robinson	30 50
1 case	S. Loffman	30 50
6 small cases	H. Manheimer	49 00
2 cases	S. F. B. Factory	29 75
1 case	E. W. Roberts	29 50
1 box	Chas. E. Lang	28 50
1 box merchandise	C. H. & Co.	28 50
1 trunk	Chas. P. Wilder	20 50
1 lot castings, shafts and wheels	Palmer, Knox & Co.	128 00
1 box	O. R. Woodman	27 25
1 case	A. H. Wilber	20 50
2 sacks quartz	W. H. Smith	27 00
1 ¾ cask	M. B.	21 50
1 bale deer skins	L. Neechen	21 60
2 cases	G. S. Beardsley	21 50
2 hay forks	John Riddey	20 50
1 case	Mrs. A. K. Turner	21 00
1 chest	H. Williams	19 75
4 pkgs pipe and iron	S. P. Roberts	32 85
1 bbl whisky	B. Mendersoll	21 00
1 box	J. & F. & Co.	20 50
2 iron hubs; wire cith	Treadwell & Co.	20 00
1 pkg castings	Wm. Lynn	20 25
1 trunk	Mrs. Willis	21 00
1 case	S. W. & Co.	18 50
1 box	L. Danerl	19 50
1 barrel	J. H. Seadent	19 00
4 boxes	G. A. Dyson	53 75
1 case bacon	H. Rossteet	18 75
1 case	Locke & Montague	30 75
1 case	Cal. Fuse Co	19 50
1 bbl wine	Frank Glas	17 00
2 bundles	Order	16 50
1 bdl sash	T. J. Hughes	30 79
1 box	S. S. Allen	30 00
2 cases	S. Hamark	17 60
1 case	Thos. Thyser	44 00
6 boxes	Union Tel. Co.	31 00
10 cases	L. P. & Co.	22 75
1 trunk and 1 case	A. M. Peck	23 00
24 bbls sal soda	Order	95 00
4 pks (B in diamond)	Order	68 00
1 chest	J. H. Treadwell	50 75
2 cases	C. B. Land	30 00
1 bundle	Dr. Mattbews	49 25
1 bale	W. Shears	47 50
2 cases and 1 hf bbl	Mrs. A. Holmes	43 00
1 case	Orik Johnson	49 75
1 case	Mrs. Flannigan	44 90
1 box	J. H. O'Brien	24 25
1 chest	W. H. Dalrymple	51 12
1 case	J. S.	23 25
1 trunk and 1 box	W. H. Herrick	51 36
1 case and 1 trunk	Mrs. S. P. Penney	49 40
1 box tobacco	J. A. B.	20 00
1 trunk	M. C. Parker	19 00
1 case and 1 bag	S. L. Rogers	20 60
1 keg wine	J. F. Hubbard	17 50
1 box	Lams & Co.	29 25
3 cases	H. H. S.	45 00
1 bellows and 1 anvil	L. C.	24 50
1 bale hops	B. S. & Co.	47 60
1 case	R. M. Wheaton	27 00
3 cases	S. S. Ingham	49 50
1 case	H. Davenport	60 60
1 box	J. W. Jenkins	22 50
5 kegs and 1 box	J. M. Sutton	60 00
5 sacks ore	Valentine & Bro.	39 00

W. A. HOLCOMB & CO.
S. L. JONES & CO., Auctioneers. 22v19-5t

T. D. YOUNG,
IMPORTER OF MACHINISTS' TOOLS,
113 and 114 Beale St., San Francisco
Screw Cutting and Hand Lathes; Planers; Shaping, Drilling, and Patent Bolt Cutting Machines. All sizes Scroll and Screw Chucks on hand and for sale cheap.
21v19-6m

Oil Cake Meal.

THE BEST FEED KNOWN

For Live Stock.

We desire to call attention to OIL CAKE MEAL, which we are now manufacturing. No description of feed so greatly promotes the health of animals as Oil Cake Meal, and we urgently request all engaged in the dairy business, raising and fattening stock, or wool growing, to give it a trial, feeling confident that they will find it of very great value. By those who have used it thoroughly, ONE pound is pronounced to be equal to two pounds of Corn Meal; and in the U. S. Government Report of the Department of Agriculture for 1865 it stands in the following relation to other feeds as to the percentage of flesh produced from a hundred pounds of feed, viz.: Indian Corn Meal, 11 pr. ct.; Barley Meal, 13 pr. ct.; Oat Meal, 18 pr. ct.; Oil Cake Meal, 22 2-100 pr. ct. For life-sustaining properties for all stock exposed to sudden changes of weather or over-driving it has no equal.

FOR MILCH COWS it is particularly valuable, increasing the quantity of milk and improving its quality to a far greater extent than any other feed known. A suitable quantity for them at the commencement is one quart in the morning and one quart at night, either alone or mixed with any other food; generally mixed with the mash of bran, slops, roots, or cut feed of any kind. It will improve it to soak it for six or eight hours, the effect being to increase its bulk two or three times. The quantity can be increased gradually, according to the effect produced—ordinarily not exceeding three or four quarts per day.

FOR BEEF CATTLE it has fattening properties which cannot be found in any other feed—the beef always being more tender and juicy and of much finer quality than when fattened on any other feed; and no feed known will so quickly prepare animals for market as Oil Cake Meal.

FOR HORSES a small quantity given daily promotes their health, and is especially valuable for them when chilled or injured from over-driving. It is one of the best remedies known for Horses subject to the Heaves or Rheumatism, and greatly increases the cleanliness, evenness and glossiness of the hair.

FOR SHEEP there is no article of feed known that produces such fine mutton or so promotes the growth of wool. A small quantity given to chilled Cattle or Sheep will keep them alive and greatly increase their warmth and vitality.

At present price ($28 per ton) it is the cheapest feed in market. It is now selling in New York at $42 per ton, gold; at $50 per ton in England, where it has been proven for a long time to be in every respect the most profitable feed known for stock of all kinds—one ton being fully equal to three tons of bran.

The increasing demand for this meal from those on this coast by whom it has been thoroughly tested has induced us to increase our facilities for its manufacture, and we are now fully prepared to furnish it in quantities as may be desired. For sale by the Grain and Feed dealers, and at the manufactory, King street, near Third All orders will receive prompt attention. Address—

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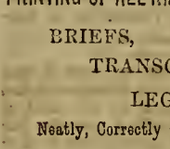


EYE AND EAR

DISEASES.

DR. ABORN'S

CONSULTING AND OPERATING APARTMENTS,

NO. 22 KEARNY STREET,

For the most modern and scientific treatment of the diseases of the EYE, EAR, HEAD, THROAT and LUNGS.

18v19-3m

International Hotel,

JACKSON STREET,

BETWEEN MONTGOMERY AND KEARNY STS.,

SAN FRANCISCO, CAL.

THIS OLD ESTABLISHED HOUSE IS IN PERFECT order for the accommodation of guests. Persons seeking comfort and economy will find this the best Hotel in the city to stop at. The Beds are new and in good order, and the Rooms well ventilated. The Table will always be supplied with the best in the market.

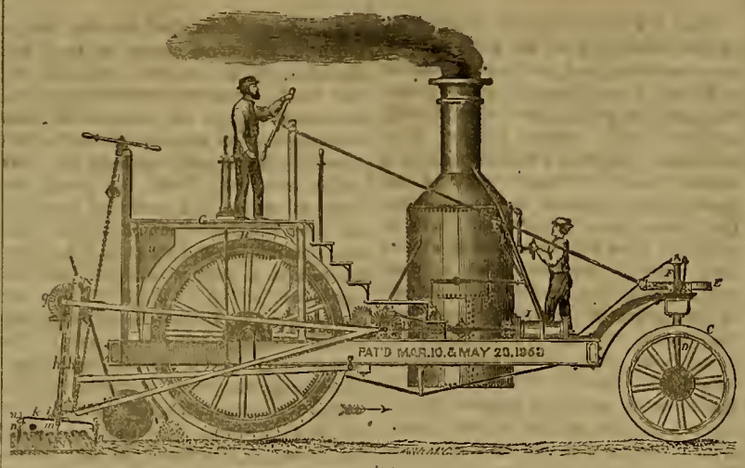
Prices varying from $1 50 to $3 per day for Board and Room.

FINE BATH HOUSE AND BARBER SHOP ATTACHED TO THE HOUSE.

☞ Teams belonging to the House will be in attendance at all the boats and cars to convey passengers to the House FREE OF CHARGE, and to any part of the city for 50 cents

21v12 F. E. WEYGANT, Proprietor.

The Standish Patent California Steam Plow.



Capacity, from FIFTEEN to THIRTY Acres per day. The success of this invention for plowing large fields, is established beyond a doubt. Individuals, clubs, or companies desiring a more rapid and economical means of cultivating their farms, are invited to call upon the inventor, PHILANDER H. STANDISH, or address him by mail, Box 17, San Francisco. Single Machines for sale. Also, State rights, and patents for England, France, and Russia.

$10. $15. $20. $25.

THE CELEBRATED IMITATION GOLD HUNTING WATCHES,

"Collins' Metal" (Improved Oroide).

These justly celebrated Watches have been so thoroughly tested during the last four years, and their reputation for time and as imitations of Gold Watches is so well established as to require no recommendations. Prices—Horizontal Watches, $10, equal in appearance and for time to Gold Watches worth $100; Full-Jeweled Levers, $15, equal to $150 Gold ones; Full-Jeweled Levers, extra fine and superior finish, $20, equal to $200 Gold ones.

We have just commenced making a very fine American Watch, full-jeweled, patent-lever, chronometer balance, adjusted to heat, cold and position, 4½ ounces down weight, equal in appearance and for time to a Gold Watch costing $250. We charge only $25 for these magnificent Watches. All our watches in hunting cases, gents' and ladies' sizes, chains, Collins Metal, $2 to $8. Also, all kinds of jewelry, equal to gold, at one-tenth the price.

CALIFORNIA DIAMONDS SET IN GOLD.

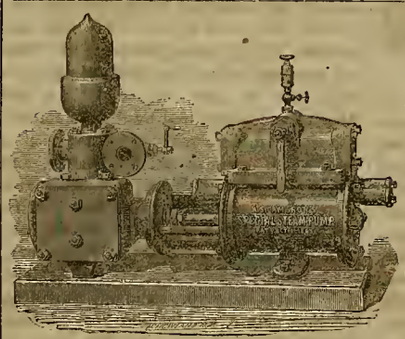
We are now making jewelry of the California Diamonds. These are real stones of great brilliancy and hardness, and cannot be distinguished from the genuine stones, even by good judges. They are particularly brilliant at night by artificial light, do not scratch or become dull by use, and retain their brilliancy for an indefinite time. The following are the prices:

Ladies' and Gents' Finger Rings, single stones, one carat weight.....$5 each.
Gents' Pins, single stone, according to the size of the stone.....$4 to $6.
Ladies' Cluster Pins.....$7 50.
Ladies' Cluster Earrings.....$7 00.

TO CLUBS.—Where six Watches are ordered at one time, we will send a seventh Watch free. Goods sent by express to be paid for on delivery.

C. E. COLLINS & CO.,

13v19-3m No. 335 Broadway, Corner of Worth Street, New York City.



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DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to 831 Kearny street, west side, between Pine and Bush, San Francisco. 21v18-1y

J. BALL,
DENTIST.

645 Clay Street, bet. Montgomery and Kearny,
SAN FRANCISCO. 20v19-1m

JOHN ROACH, Optician,

Has removed from 522 Montgomery street to

540 Washington street,

East of Montgomery.

Surveying Instruments made, repaired and adjusted 22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.

GRAY & HAVEN,

ATTORNEYS AND COUNSELORS AT LAW,

In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,

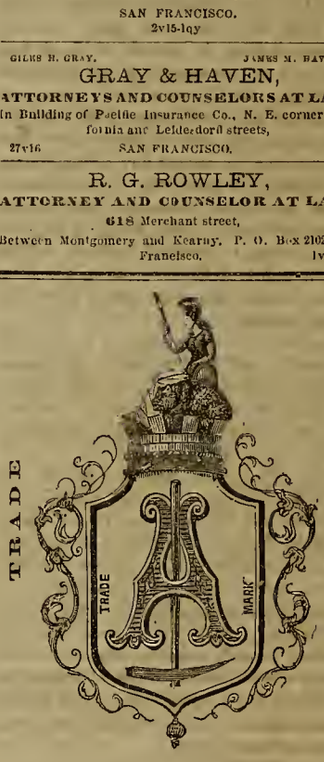
27v16 SAN FRANCISCO.

R. G. ROWLEY,

ATTORNEY AND COUNSELOR AT LAW,

618 Merchant street,

Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf



New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,

NEW ALMADEN,

Santa Clara County.

F. L. A. PIOCHE.....Proprietor
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET.

GENERAL DEPOT:

Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the venous circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness WITH THE ADVICE OF A PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the PHYSICIAN ONLY can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever;* Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the Indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever;* Gout, *when the patient is still able to walk;* Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 25v18tf

Reading for the Hour.

Nature's Electrical Machines.

Friction is a more general source of electricity than is commonly supposed. It is well known that, if we rub a stick of sealing wax or a glass tube with a silk handkerchief, it becomes electrified. So does the bendkerchief also, although somewhat differently, the one being *positively*, the other *negatively* electrified, as it is called. The familiar electrical machine is merely a contrivence for rubbing glass and silk together, only as the surfaces of friction are increased, the effect is greatly enhanced. Now it has been found that almost any sort of friction produces electricity. Thus, it is developed by blowing air over glass. The "hydro-electric" machine, one of the most powerful generators of electricity known, is simply a steam boiler, so constructed that globules of water rub against the sides of a peculiarly made vent-cock.

As the air is continually rubbing against the earth, sometimes with great rapidity, we cannot think it strange when we find that both are constantly in an electrified condition. And when a storm arises, and the clouds filled with water rush over the surface and rub against hills and trees and one another, we can see how a vast charge of electricity is stored up. As the atmosphere is a poor conductor, this charge grows continually, until finally it acquires force enough to break all barriers, and the lightning flies to the earth, as in the electrical machine the spark leaps from one wire to another.

But while for some purpose, to us as yet unknown, nature thus stores up atmospheric electricity, she also guards against its doing us injury by providing numberless conductors which quietly and harmlessly receive the charge and bear it to the earth. We use the lightning-rod for this purpose; but nature provides much better conductors in the trees and plants, whose myriads of points are directed to the sky, in the mountain chains, whose summits pierce the clouds, and furthermore, in those winged messengers, the rain drops, which thus protects while moistening the parched ground; and it is only in extraordinary circumstances, when electricity is developed more rapidly than it can be dissipated through these channels, that a violent discharge occurs.

A Sign of the Times.—The general principle on which Americans, as a rule, are supposed to eat, is to dispose of as large a quantity of food as possible in the smallest possible time; and there is a pretty large grain of truth, too, in the supposition. Whether he is actuated by this idea and wishes to improve on it, or not, we don't know; but a certain restaurant keeper in this city has put up a sign of "high-pressure board" before his establishment. As we are unwilling to put our legs into bear-traps for the general edification of the bystanders, so we have hesitated about testing the merits of this particular eating-house, fearing the result of being subjected to the process. We are ready, however, to receive information from any philanthropic individual who is inclined to risk his digestion for the sake of the public weal.

How "Punk" is Made.—Punk, or German tinder, is made from a kind of fungus or mushroom, that grows on the trunks of old oaks, ashes, beeches, etc. It should be gathered in August, or September, and is prepared by removing the outer bark with a knife, and separating carefully the spongy, yellowish mass that lies within it. This is cut into slices, and beaten with a mallet to soften it, till it can easily be pulled asunder between the fingers. It is then boiled in a strong solution of saltpeter.

Put not your trust in money, but put your money in trust.

Mud Volcanoes.

There is a certain class of so-called volcanoes which eject, in the place of lava, water and slime, and often a huge number of fishes. These, of course, are not proper volcanoes, nor are they phenomena directly connected with volcanic activity. They sometimes arise from a sudden melting of masses of snow in the snow region of high peaks or from a similar cause; sometimes they come from subterranean cavities, which are filled with water, and in which a small variety of fish, the *Pymelodus Cyclopum*, abounds. Very likely the violent shocks of internal volcanic activity open cracks in the ground, through which the water, mixed with mud, is violently ejected. Sometimes so much of this is thrown up that quite an extent of adjacent land is covered, and the air, for a long distance around, tainted with the odor of decayed fishes. Such phenomena are seen in South America and other places.

There are also phenomena to which the name of mud volcanoes is particularly applied. These are formed by inflammable and other gases rising through accumulations of argillaceous slime. As the top of the slime begins to dry, forming a thin crust, the gases blow up and pile this in conical heaps around crater-like openings, the heaps gradually increasing in size as the operation continues. A rainy season will often level these heaps, which are again formed in dry times. Such mud volcanoes, out of which sometimes flames of burning gas issue in long jets, or naptha, mineral oil, or salt solutions flow, are known in Sicily, Modena, the Crimea, on the island Taman (in the south of Russia), on the shores of the Caspian Sea, in Java, New Grenada, etc.

Mud Volcanoes of New Grenada.

In the Colorado Desert, about latitude 33° 24′ and longitude 38° 42′, there is an area about one-fourth of a mile long and one-eight wide, which is covered with mud volcanoes. The surface of the ground, which is of soft mud, is continually agitated by escaping steam, hot water and sulphurous gases. These sometimes rise steadily with a hissing noise, and sometimes heave up and burst the top mud, often throwing it high in the air, at irregular intervals. In many places they gradually form hillocks, often of a very regular conical shape. Here and there are jets of boiling water twenty-five to thirty feet high; and not unfrequent are large basins, a hundred feet in diameter, in which a bluish pasty mass is bubbling and seething. Deposits of sulphur and of carbonate of lime are found, and the air is strong with sulphureted hydrogen. The noise is audible at a distance of ten miles, and the vapors are visible at a much greater distance. It is dangerous to approach very near to the basins or springs, as one is liable to break through the thin surface crust, and as, moreover, new vents are being continually formed, in which case the slime and steam are thrown up in sufficient quantity and with violence enough to prove fatal. This region, although highly interesting, is seldom visited, as its very desolate situation makes the journey arduous and difficult.

Pure water will, under some circumstances, corrode lead pipes and dissolve more lead than water containing lime salts (hard water), which form a crust on the surface of the pipes and thus preserve them from the action of the water.

The Science of Eating.

Chemistry shows that we may distinguish four general classes of food: 1st, that class which principally supplies fat, fuel for the lungs and heat for the system, and which we will call heaters; 2d, that which principally supplies the waste of the muscles—the muscle makers; 3d, that which principally feeds the bones, the brain, the nerves, and gives vital powers—the brain and nerve suppliers; and, 4th, that class whose chief object is to keep the stomach in a healthy condition and the system cool and free, which we will call waste. No one of these classes alone will support us in a healthy state, nor all together, unless used in proper proportions. These proportions vary according to the various circumstances and conditions of life, and the science of eating—of which, simple as it is, so little is generally known—consists merely in selecting our food so as to supply our bodies with the requisite relative amounts of heaters, of muscle-makers, of brain and nerve-suppliers, and of waste.

To attain this science we need no long years of study. Nature, which has taught the brute creation to select the right kinds and quantities of food, has not neglected man, but has given him reason, appetite and taste, to guide him. The difficulty is, that we neglect and corrupt our guides. Take a simple example of nature's teaching. In cold weather we desire and can eat without unpleasant results fat meats, butter and similar articles; in summer our desire for these is less, and if we indulge heartily in them we become torpid, indolent and sleepy, if not absolutely sick. And why? Because in cold weather we *need* more, and in warm less, of this class of food which are preëminently heaters. In warm weather we desire fruit, green vegetables etc.—waste—to keep us cool and our bowels open, while in the cold these articles do not satisfy us because they do not supply the necessary heat and muscle. Again, nature provides us with proper food according to our different conditions. If we eat a grain of wheat and examine it under a microscope or by chemical analysis, we find four distinct parts; an outer coat or bran containing iron and other elements required by the system and also woody fibre useful as waste; next a layer which contains chiefly heaters, and finally the germ holding the brain and nerve suppliers. Moreover the relative amounts of these differ in hot and in cold climates, northern wheat holding more, and southern wheat less, of the heaters, etc. Man is, however, strangely unwilling to follow nature, and fashion has ordained that we should undo what has been so carefully done for us, that we should use superfine or bolted flour,—that is flour consisting principally of heaters, as the other parts being glutinous are rejected with the bran in the process of bolting; and thus instead of getting an article on which alone we could thrive, we get that which will sustain life but a short time; for experiments have shown that superfine flour will keep animals alive only 50 to 60 days, while those fed on unbolted flour will thrive an indefinite period. Yet give a child or a person whose taste is unperverted the choice between bread made of bolted and that made of unbolted flour, and the latter will be preferred.

A man working hard in the cold needs in a higher degree heaters and muscle-suppliers. For such a man, fat and lean meats, as pork and beef, are the staples. Northern corn, beans and peas, cheese, etc., are good. These are not all very easily digested, but in cold weather the stomach has stronger digestive powers than in warm, and it is just as rational to exercise our stomachs as to exercise our muscles. The same man in warm weather needs but little fat, can substitute veal for pork, take lean meat, hominy and the vegetables which nature provides at such seasons.

The man engaged in labor requiring more mental and less bodily exertion needs, of course, more brain and less muscle supplies. Lean meats, fish, barley, unbolted wheat, bread and milk, a certain amount of vegetables, etc., are proper. Let such a man observe his mental capacity after a meal of fried pork and potatoes, or white bread and butter, or cakes and syrup, or farinaceous pudding, and then after one of rare roast beef, or beefsteak, or fish and potatoes, and see how much more mental labor he can perform in the latter case.

The sum of this whole matter is this: that if we watch closely we can easily see what nature indicates, and by following her indications, in sickness as well as in health, we shall certainly go aright.

The Great Cardiff Giant still continues to excite curiosity and interest. An offer of $70,000 for the whole, and one of $25,000 for an eighth interest in the figure, have been refused. While one set are ridiculing the thing as a first-class humbug, others are diligently working up speculations to account for it. The latest idea we have seen stated is, that it was made by the Northmen; and in support of this, Clerk's "History of Onondega," published in 1849, is quoted. In this book it is stated that a tradition was extant among the Onondaga Indians that among the objects injurious to their nation were "the big hog, the big bear, the horned water serpent and the stone-giant." As the giant has been found to be entirely harmless and quiet at the present time, it is to be expected that the big bog, the big bear and the horned water serpent will shortly be discovered, to make the thing complete, and all combined to one "happy family."

One of the new members of the Board of Supervisors has proved a valuable acquisition to the Ring. Not only does he lend the influence of his voice in the meetings of the Board, in its support, but lately he has been adding to this the weight of his fist in outside encounters with those who differ in opinion. This by no means novel line of argument, although extremely forcible, is still open to some objections; and we expect to hear the fact held up in Eastern cities as an example of how difficult questions are settled on this coast. If we care anything for the reputation of our city, it would be well to prohibit the publication of such little meetings, as it seems nearly impossible to prevent the meetings themselves.

What Would Occur if the Earth Should be Stopped in its Orbit.—If the earth should be stopped in its orbit, it would begin to fall straight towards the sun. As it approached more nearly to that great source of heat it would soon reach a point where the temperature is as high as 212°, and then all the waters of the ocean would soon be evaporated. As it drew still nearer, the rocks would be melted, and afterwards they also would be evaporated. Before it reached the sun this solid earth would be converted into a vast volume of red-hot gas, which when it fell into the fiery atmosphere of the sun, would merely produce blasts of wind at the point where it struck outward in all directions.

Musical Festival.—Camilla Urso proposes to get up a grand Musical Festival, to be held in this city, for the benefit of the Mercantile Library. Musicians from all parts of the coast are to be invited to take part, and it is thought that to such the railroad companies will give free passes; moreover, that the hotels here will make proper reduction in their prices. It is estimated that some 12,000 spectators can be accommodated in the Pavilion, and that several hundred musicians will participate.

Edwin Bryant, author of a book giving account of two trips to California in 1849, and 1850, lately jumped from a three-story window in Louisville, and was killed.

TO MAKE NEW ROPE PLIABLE.—Many of onr readers have experieneed great difficultyin handling new ropes. Every farmer knows how nnmaageable a new, stiff ropehalter is, and his patience is severely tried when he tries to tie up his eattla with it, as the ropa will coil itself iato every shape bat the one required. Often he fiads his horses and cattle rsmpaging aboat the barn, haviag loosened the kaots of the new halters. By simply boiliag the rope in water for two hours, all this trouble can be avoided, and the ropo made as pliable as if used for months. Its strength is not diminished, but its stiffaess is goae. It must hang in a warm room until thoroughly dried, and not allowed to kink. This easy remedy will secure horses aad cattle from many kicks and blows, and prevent mnch profanity.

A SCIENTIFIO Swede of a statistieal turn of mind has compnted that the explosion of a qnarter of a ton of glyceriae would blow the entire territory of Sweden into the middle of the Aretio Sea. So the *Rigsdag* interfcres, and bnrghers parade the streets bearing banners, upon which is inscribed the Swedish equivalent of "No Glyeerine."

A Word for Home Inventors.

OAKLAND, CAL., December 1, 1869.

MESSRS. DEWEY & Co.—Gentlemen: Permit ns through yonr paper to return our earnest tbanks for tbo prompt and successful manner in wbicb you have condncted the various matters of business with tbo Patent Office committed to yonr care, more especially in securing for us our last valuable patent in the face of so many difficulties. Were it an ordinary case, in which you bad simply secured us a patent, and for wblch services you bad received a suitable equivalent, we sbould hardly consider you entitled to our thanks, however much we might feel gratified with your professional ability, uniform courtesy, or success. But this seems to be an exceptional case, and entitled to peculiar consideration. Without entering here into a detailed account of the legal complications and various discouraging circumstances you were obliged to contend with, suffice it to say, tbat your almost unboped for success, securing, as you did, a full patent, despite all these obstaclee, in so short a time, was scarcely less surprising than gratifying to us; and we feel it a pleasant duty to offer you this merited testimonial of our appreciation for the valnable services rendered, and to return you our sincere thanks for tbe same.

In closing, we would say to tbe public that tbis is entirely voluntary on our part, as Messrs. Dewey & Co. neither asked it at our hande, nor knew that we intended giving it. It is simply a free-will offering to professional skill and reliability, and a word of friendly counsel to otbers on tbis coast wbo may be possessed of valuable inventione on which they wish to eecure patents. To all euch our earnest advice is to place them at once in the bands of Dewey & Co., instead of being driven to it by a sad experience like our own.

Yours truly, HUBERT BURGESS,
JAMES STRATTON.

FOR THROAT DISEASES and affections of the Chest "*Brown's Bronchial Troches*," or Cough Lozengea, are of great valne. In Cougbe, Irritation of the Throat caused by cold, or Unusual Exertion of tbe vocal organs in speaking in public or singing, they prodnce the most beneficial results. Tbe Troches bave *proved* tbeir efficacy,

To a lady friend, no present would be more acceptnble than a pair of opera glasses. C. Muller, 205 Montgomery, has a fine assortment. ***

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

PAIN KILLER, after a thorongh trial by innumerable living witnesses, hae proved itself THE MENICINE OF THE AOE. It is an internal and external remedy. One positive proof of its efficacy is, tbat its salea have constantly increased, and wholly upon ita own merits. Tbe effect of the Pain Killer upon the patient when taken internally, in cass of Cold, Cough, Bowel Complaints, Cholera, Dysentery, and other affections of the syetem, has been truly wonderful, and has won for it a name smong medical preparations tbat can never be forgotten. Its success in removing pain, as an external remedy, in cases of Burns; Bruises, Sores, Sprains, Cuts, Stings of Insects, and other causes of suffering, bas secured for it such a host of teetimony ae an almost infallible remedy that it will be banded down to posterity as one of the greatest medical discoveries of the nineteentb century.

REDINGTON & CO. and HOSTETTER & SMITH, San Francisco, General Wbolesale Agents. dc4

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use t for any of these, and yoa will never do without it. Its success as a valnable family medicine has induced others to initiate and counterfeit the Pain Killer to somo extent. *Beware of Counterfeits!*

PHOTOOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

RETURNED.—Dr J. H. Paine, Dentist, Wadsworth House No. 325 Snsh street, between tbe Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

SEND FORMER ADDRESS when you wish your paper directed to a new place.

BLOCK TIN AND SOLDER WIRE, broom wire, piano covering wire, etc., manufactured by Joshua Gray, 437 Brannan street. 24v19-3m

New Mining Advertisements.

Arctic Silver Mining Company.—Location of Works: Cortez, Lander County, Nevada.

Notice is hereby given, that at a meeting of tbe Board of Trustees of said Company, held on the seventeenth day of September, 1869, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to S Wonban, at Cortez.

Any stock upon which said assessment shall remain unpaid on the twentieth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.
Office, 426 Montgomery street, San Francisco. dec18

Cassell Silver Mining Company.—Location of Works: Cortez, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of December, 1869, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to S. Wenban, at Cortez.

Any stock upon which said assessment shall remain unpaid on the twentieth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.
Office, 426 Monigomery street, San Francisco. dec18

Glenwood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteenth day of December, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, 418 California street.

Any stock upon which said assessment shall remain unpaid on the tenth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, No. 418 California street, San Francisco. dec18

Idaho Silver Mining Company.—Location of Works: Cortez, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day December, 1869, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, or to S. Wenban, at Cortez.

Any stock upon which said assessment shall remain unpaid on the twentieth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Tuesday, the eighth day of February, 1870, to pay the delinquent assesment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.
Office, 426 Montgomery street, San Francisco. dec18

Silver Star Consolidated Silver Mining Company, White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the second day of November, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J M Gridley	39	740	$111 00
J R Patridge	13, 14, 17, 18 20—10 ea.	50	7 50
W P Raymond	7	50	7 50

And in accordance with law, and an order of the Board of Trustees, made on the second day of November, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, 37 New Merchants' Exchange, California street, on Monday, the third day of January, 1870, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINOTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. dec18

Yosemite Mining Company, Oro Fino District, Humboldt County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of December, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco, or to J. T. MACLEAN, Superintendent, at the mine.

Any stock upon which said assessment shall remain unpaid on the nineteenth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fifth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary pro tem.
Office, 220 Clay street, San Francisco, Cal. dec18

Mining Notices—Continued.

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Sharp	3	100	$50 00
J L Schroeder	6	100	50 00
A Caselli	6	100	50 00
J Landsmann	13	100	50 00
C Martin	7	50	25 00
G Mahe	8	50	25 00
W H Hagermann	9	50	25 00
J C Yunge	10	50	25 00
O W Sharp	12	50	25 00
S Mayer	11	50	25 00
H Dreschfeld	14	145	72 50
L Rosenbaum	43	50	25 00
L Adler	47	5	2 50
C Wennerholz	20	10	5 00
W A Ilse	42	33	16 50

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of saidstock as may be necessary, will be sold at public auction by J. Middleton & Son, at their salesroom, 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assesmept thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the ninth day of December, 1869, an assessment of two dollars and fifty cents ($2,50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twelfth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty ninth day of January, 1870, to pay the delinquent assesment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary.
Office, 220 Clay street, San Francisco, Cal. dec11

La Blanca Gold and Silver Mining Company.—Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of November, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Sonnenberg, L B	19 252	12	$12 00
Schleicher, Jacob	84	15	15 00
Schleicher, Jacob	105	5	5 00
Schleicher, Jacob	139	5	5 00
Schleicher, Jacob	305	5	5 00
Schleicher, Jacob	372	5	5 00
Schleicher, Jacob	389	11	11 00
Wertheimer, E	227	10	10 00
Hildebrandt, G W	222	10	10 00
Hildebrandt, G W	238	10	10 00
Hildebrandt, G W	244	10	10 00
Hildebrandt, G W	262	10	10 00
Hildebrandt, G W	347	8	8 00
Hildebrandt, G W	308	2	2 00
Hildebrandt, G W	435	2	2 00
Hartmann, Charles	136 328	12	12 00
Klivesahl, E W	118	5	5 00
Klivesahl, E W	269	5	5 00
Klivesahl, E W	330	1	1 00
Klivesahl, E W	331	5	5 00
Klivesahl, E W	397	5	5 00
Klivesahl, E W	400	3	3 00
Trenkle, E	456	6	6 00
Diefienbacher, Eliza	533	8	8 00
Thyes, Adolphine	534	10	10 00
Thyes, Hermann	535	109	109 00
Mayrisch, Marie	366	1	1 00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of November, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, San Francisco, on Tuesday, the twenty-first day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assesment thereon, together with costs of advertising and expenses of sale.

JOSEPH GOLDMAN, Secretary.
Office, No 312 Front street, San Francisco, Cal. dec4

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. shares.	Amount.
J L Schroeder	6	40	$20 00
A Caselli	8	40	20 00
J Bandmann	7	40	20 00
C Martin	8	20	10 00
G Mahe	9	20	10 00
W H Hagermann	10	20	10 00
J C Yauge	11	20	10 00
S Mayer	14	20	10 00
H Dreschfeld	15	60	30 00
L Rosenbaum	47	20	10 00
O F Sharp	12	20	10 00
H Dreschfeld	49	5	2 50
W H Sharp	3	40	20 00

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinqnent assessment thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

Pocahontas Gold Mining Company.—Location of Works: Mud Springs, El Dorado County, California

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twelfth day of November, 1869, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, at the office of the Company, No. 419 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinqaent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the twelfth day of January, 1870, to pay the delinquent assesment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.
Office, 419 California street, San Francisco, Cal. no20

Pilot Mining Company—Location of Works: White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty third day of November, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room No. 7, 423 California street, San Francisco.

Any stock upon which said assessment shall remain unpaid on Monday, the third day of January, 1870, shall be deemed delinqnent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighteenth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. M. HARRON, Secretary.
Office, Room No. 7, 423 California street, San Francisco, California. no27

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the sixteenth day of November, A. D. 1869, an assessment of thirty cents per share was levied upon each and every share of the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No 529 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the twentieth day of December, 1869, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the third day of January, 1870, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

SAM'L S. MURFEY, Secretary.
Office, 530 Montgomery street, over Sather's Bank, San Francisco, California. no20

New Advertisements.

THEODORE KALLENBERG,
Machinist, and Maker of Models for Inventors.

All kinds of Dies, Stamps and Punches made. Also, all kinds of Small Gears cut. Repairing done on very reasonable terms, and in the best manner. ☞ No. 10 STEVENSON STREET, near First, Pioneer Mills. 25v19-3m

THE GIANT
POWDER COMPANY.
BANDMANN, NIELSEN & CO.,
General Agents,
No. 210 Front Street, San Francisco. 25v19

Gas Fixtures.

The Largest and most Modern Dealgns of GAS FIXTURES, incinding Parisian Patterns, Gold Gilt, are to be found at

335 Pine St., below Montgomery.
—ALSO—
Mantel Clocks, Statnettes and Portables,
Saitable for Holiday Presents,

All of which will be sold at greatly reduced prices till the 1st of January.

THOMAS DAY.

☞ Everything connected with Gas and Plumbing to be found as usual at

732 Montgomery Street. 25v10 1m

Metallurgical.

The undersigned respectfully snnounce to the public (especially to parties interested in mining) that they bave opened an office at

No. 36 FREMONT STREET.

And WORKS at H. J. BOOTH & CO'S FOUNDRY, northeast corner First and Mission streets, San Francisco, where Ores in small or large quantities of all kinds can be worked by Pan Amalgamation, Chlorination or Smelting, and all kinds of Assaye and Analyses made. We will also sample any Oree entrusted to our care; and in all cases returns made in the shortest time possible. We will give consultations on the best metbods of successfully working Sulphurets or Refractory Ore.

Drawings Furnished for Quartz Mills, Smelting and Chlorination Furnaces.

By having had long practical experience in working Gold, Silver, Copper and Lead Ores, we hope thereby to get a share of the patronage of the mining public.

☞ Mines Examined and Reports made.

REFERENCES.—William Bosworth, Thomas Varney, Egbert Judson, E. T. Steen, Wm. Bellshaw, P. Reichling, W. O. Sleeper, J. L. N. Shepard, Norbert Landry.

CHAS. PLETZ & CO.

CHAS. PLETZ, Analytical Chemist.
FRED. MORRIS, Amalgamator and Millman. 25v19-3m

Advertising and Subscription

Rates for the Mining and Scientific Press.

Subscriptions in Advance:—One year, $5; Six months, $3; Single copies 12½ cts; Monthly Series, $5 per annum; QUARTERLY SERIES (silf paper binding) $6 yearly.

Lowest Rates for Advertising:

We shall adhere to the following rates (payable in gold coin) for advertising in the MINING AND SCIENTIFIO PRESS from this date:

One column, one year	$400 00
Half column, one year	200 00
One column, six months	200 00
Half column, six months	100 00
One column, three months (13 weeks)	100 00
Half column, three months	50 00
Per line (smallest type) one year	3 00
Per line (20 lines or more) one year	2 40
Per line, three months	1 00
Per line (10 lines or more) three months	80
Per line, one month (4 weeks)	50
Per line (10 lines or more) one month	40
Per line, one week	25
Per line (10 lines or more) one week	20

Particular attention will be given to preparing engravings, inserting advertisements in conspicuous, novel and attractive form; we will otherwise assist advertisers in getting un their notices, when desired.

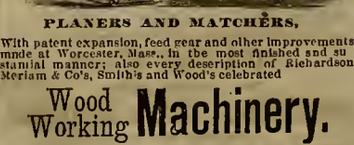
☞ All advertisements in the PRESS appear in both the ☞ MONTHLY AND QUARTERLY SERIES of the MINING AND ☞ SCIENTIFIC PRESS, which (by special arrangement) are ☞ placed for FREE READING in the principal hotels, steam- ☞ boat and steamship saloons, depots, and public reading ☞ rooms and libraries in San Francisco, and the Pacific ☞ States. Many volumes are also bound, thus affording ☞ permanent advertising.

The PRESS now receives the largest and best advertising patronage of ANY WEEKLY PAPER west of the Rocky Mountains.

In regard to the valne of advertising in our journal, we refer with pleasure to those who can speak from experience—*our advertisers*. Better referees, or more reliable names, cannot be found in the advertising columns of any newspaper in the world.

DEWEY & CO.,
Publishers and Patent Agents.
No. 414 Clay st., San Francisco, May 1, 1869.

Woodworth Planers,



PLANERS AND MATCHERS,

With patent expansion, feed gear and other improvements made at Worcester, Mass., in the most finished and substantial manner; also every description of Richardson Meriam & Co's, Smith's and Wood's celebrated

Wood Working Machinery.

Embracing Mortising, Sash and Moulding, Smith's Slickers, Slat and Door Tenoning, Boring, Shaping, Scroll Sawing, Planing, Rod and Dowell making and Re-sawing Machines, Wood and Engine Lathes, etc., for sale at Eastern prices, at the Machinery Depot of

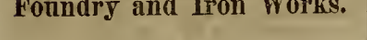
BERRY & PLACE,
112 and 114 California st., San Francisco.

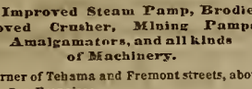
☞ Agents for Blake's Patent Steam Pump, (warranted the best in the market); Davis & Furber's Woolen Machinery, etc. Being the selling agents for most first class Eastern builders, millmen and others in want of Machinery can save money by giving us a call. Illustraied Catalogues sent free.

Machinists and Foundries.

FULTON
Foundry and Iron Works.
HINCKLEY & CO.,
MANUFACTURERS OF
STEAM ENGINES,
Quartz, Flour and Saw Mills,
Hayes' Improved Steam Pamp, Brodie's Improved Crusher, Mining Pamps, Amalgamators, and all kinds of Machinery.
N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GLASGOW
Iron and Metal Importing Company
Nos. 25 and 27 Fremont street,
SAN FRANCISCO,
Keep constantly on hand a large stock of best Bar and Bandle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings which they offer to the trade on liberal terms.
21v16-3m W. McCRINDLE, Manage.

PACIFIC FILE WORKS,

No. 53 Beale Street, bet. Market and Mission,
SAN FRANCISCO.
Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.
2v17-3m T. G. DURNING & CO


JAMES MACKEN,
COPPERSMITH,
226 Fremont st., bet. Howard & Folsom.
All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.
Repairing promptly and neatly attended to.
1v11

CALIFORNIA BRASS FOUNDRY.
No. 125 First street, opposite Minna,
SAN FRANCISCO.
ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.
☞ PRICES MODERATE. ☜
J. P. GALLAGHER. J. H. WEED V. KINGWELL.
9v13-1y

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,
Nos. 18 and 20 Fremont street, near Market, San Francisco.
MANUFACTURER OF
Fire-Proof Doors and Shutters,
Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison
FORGING AND MACHINE WORK,
IMPROVED FIRE-PROOF SAFES,
FIRE AND BURGLAR-PROOF SAFES
Of a superior make. Sole manufacturer of the celebrated
MONITOR SAFE.
BANK VAULTS AND SAFES,
Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand. Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States
1v17tf

UNION IRON WORKS,
Sacramento.
WILLIAMS, ROOT & NEILSON,
MANUFACTURERS OF
STEAM ENGINES, BOILERS,
CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,
WILCOX'S PATENT WATER LIFTERS,
Dunbar's Patent Self-Adjusting Steam Piston
PACKING, for new and old Cylinders.
And all kinds of Mining Machinery.
Front Street, between N and O streets,
1v11 SACRAMENTO CITY.

GEO. T. PRACY'S
MACHINE WORKS,
109 and 111 MISSION STREET,
SAN FRANCISCO.

MANUFACTURER OF
PRACY'S IMPROVED
PATENT STEAM ENGINE
GOVERNOR.
These Governors are the most sensitive built, running at a high velocity and maintaining a uniform speed.
SOLE AGENT FOR
L. W. POND'S CELEBRATED TOOLS,
—SUCH AS—
Lathes, Planers, Drills, Boring Mills, Milling Machines, Etc.,
Which I will offer at very low rates. Also,
MORSE'S TWIST DRILLS,
AND CHUCKS OF ALL KINDS.
MANUFACTURER OF
Steam Engines, and Mill Work Generally.
☞ Sole Agent for TAFT'S PATENT SHEARS AND PUNCHES. 24v19

McAFEE, SPIERS & CO.,
BOILER MAKERS
AND GENERAL MACHINISTS,
Howard st, between Fremont and Beale, San Francisco.
Pine or Tubular **Boilers,** with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and and Marine Boilers, and Wrought Iron Tanks of every description.
Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, hight of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.
Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.
To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.
Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care
To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

THE RISDON
Iron and Locomotive Works.
INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.
Corner of Beale and Howard Streets,
SAN FRANCISCO.
Steam Engine Builders, Boiler Makers, Machinists, Foundrymen, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.
Directors:
S. F. Butterworth, Wm. Norris, Lloyd Tevis, Joseph Moore, John N. Risdon, James Pollock, Chas. E. McLane,
JOHN N. RISDON.....President.
JOSEPH MOORE.....Vice President and Superintendent.
LEWIS R. MEAD.....Secretary.
24v17-qy

HUGH H. LAMONT. WM. CALDWELL.
CYCLOPS MACHINE WORKS,
Construct and Repair every description of
Stationary and Marine Engines, Mill and Mining Machinery.
Special attention given to Repairing Machinery.
ap17-3m 113 Beale street, near Mission, S. F.

CALIFORNIA FILE MF'G CO.
No. 437 Brannan Street,
Between Third and Fourth, San Francisco.
W. WUSTHOFF, L. KRAMER, M. HARRIS. J. BURKE.
NEW FILES OF EVERY DESCRIPTION
ON HAND AND MADE TO ORDER.
Old Files Re-cut and warranted equal to new.
REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19 qy

NELSON & DOBLE,
AGENTS FOR
Thomas Firth & Sons' Cast Steel,

MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools,
13 and 15 Fremont street, near Market, San Francisco.
10v14qr

SAN FRANCISCO
Pioneer Screen Works.
JOHN W. QUICK,
293 Fremont street, near Howard, San Francisco.
Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.
ORDERS SOLICITED AND PROMPTLY ATTENDED TO.
I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT.
UNION IRON WORKS,
CORNER FIRST AND MISSION STREETS,
SAN FRANCISCO.
MANUFACTURE
ALL KINDS OF MACHINERY
MARINE, LOCOMOTIVE,
And Stationary Engines,
Booker Patent Locomotive Stack,
ARMSTRONG PATENT
Heater, Condenser and Filter, Combined.
BOILERS, HIGH AND LOW PRESSURE,
Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Patton's, and Belding's Amalgamating Pans and settlers; Hendy's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white Iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Hendy, Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.
We would call particular attention to our
SCOTT & ECKART CUT-OFF ENGINE.
As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Off at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:
"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very steadily and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 60 horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 50 or 60 horse power with ease and economy. Awarded silver medal. Wm. Burnett, Monty Fletcher, John Myers."

Pickering Governors, Machinists' Lathes,
Planers, Shapers, Drills, Etc.,
On hand and for sale. Drawings furnished free of cost. Orders promptly attended to. A complete stock of fittings on hand.
☞ We are prepared to furnish all kinds of Machinery at short notice, as our facilities are unequalled on the Pacific Coast.
H. J. BOOTH & CO.

CITY IRON WORKS COMPANY.
CLERC & CO.,
IRON FOUNDERS,
Steam Engine Builders, and Makers of all kinds of Machinery,
16v16q No. 23 Fremont street, San Francisco.

FOUNDRY FACINGS.
BENJAMIN ELLIOT,
No. 482 Brannan street.....San Francisco,
Manufacturer Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in barrels. Black Lead, Lake and Soapstone ground to order.
☞ Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.
10v18qr

CALIFORNIA TOOL WORKS,
Blacksmith and Machine Shop,
143 Beale St., bet. Mission and Howard,
SAN FRANCISCO.
All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.
21v17-qy J. WEICHHART, Proprietor.

THOMPSON BROTHERS,
EUREKA FOUNDRY,
129 and 131 Beale street, between Mission and Howard San Francisco.
LIGHT AND HEAVY CASTINGS,
of every description, manufactured 24v16qr

HIBBERD, SANBORN & CO.,

South Point Mills, Berry Street,
Between Third and Fourth, San Francisco. Orders from the country promptly attended to. All kinds of Stair Material furnished to order. Wood and Ivory Turners. Billiard Balls and Ten Pins. Fancy Newels and Balusters.

HAYWARD & COLEMAN
IMPORTERS AND REFINERS
—OF—
Illuminating, Lubricating,
—AND—
PAINT OILS,
CONSISTING OF
KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.
—ALSO—
Spirits of Turpentine and Alcohol.
Lamps and Lamp Stock!
An elegant and complete assortment.
SOLE IMPORTERS OF
'Devoe's Illuminating Oil'
PATENT CANS.
5v17-tf 414 Front street, San Francisco.

The Perfection of Prepared Cocoa.
MARAVILLA COCOA.
Sole Proprietors—TAYLOR BROTHERS, London.
The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skilful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after a trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon, etc.
"A SUCCESS UNPRECEDENTED."
[See following extract from the Globe of May 14, 1868.]
"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."
Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Non-acidulated Cocoa and Soluble Chocolate, Steam Mills, Brick Lane, London.
8v19 6m

Ayer's
Hair Vigor,
For restoring Gray Hair to its natural Vitality and Color.

A dressing which is at once agreeable, healthy, and effectual for preserving the hair. *Faded or gray hair is soon restored to its original color with the gloss and freshness of youth.* Thin hair is thickened, falling hair checked, and baldness often, though not always, cured by its use. Nothing can restore the hair where the follicles are destroyed, or the glands atrophied and decayed. But such as remain can be saved for usefulness by this application. Instead of fouling the hair with a pasty sediment, it will keep it clean and vigorous. Its occasional use will prevent the hair from turning gray or falling off, and consequently prevent baldness. Free from those deleterious substances which make some preparations dangerous and injurious to the hair, the Vigor can only benefit but not harm it. If wanted merely for a
HAIR DRESSING,
nothing else can be found so desirable. Containing neither oil nor dye, it does not soil white cambric, and yet lasts long on the hair, giving it a rich glossy lustre and a grateful perfume.
Prepared by Dr. J. C. Ayer & Co.,
PRACTICAL AND ANALYTICAL CHEMISTS,
LOWELL, MASS.
PRICE $1.00,
Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v18eow4m

San Francisco Metal Market

PRICES FOR INVOICES.

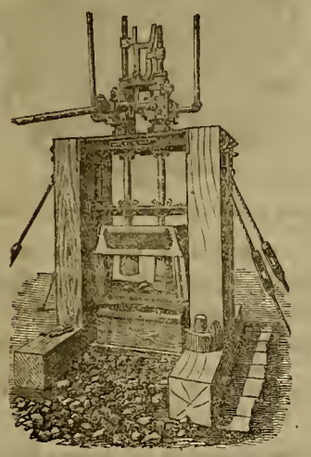
Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, December 10, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 68c ₱ 100 lbs; Bar, 1@1¼c ₱ lb; Sheet, polished, 3c ₱ lb; common, 1¾@1¾c ₱ lb; Plate, 1¾c ₱ lb; Pipe, 1¾c ₱ lb; Galvanized, 2¾c ₱ lb.			
Scotch and English Pig Iron ₱ ton	$29 00	@	30 00
White Pig ₱ ton	27 50	@	28 00
Refined Bar, bad assortment ₱ lb	— 03	@	— —
Refined Bar, good assortment, ₱ lb	— 04	@	— —
Boiler, No. 1 to 4	— 04½	@	— —
Plate, No. 5 to 9	— —	@	— 04¾
Sheet, No. 10 to 13	— 04½	@	— 5
Sheet, No. 14 to 20	— 05	@	— 5¾
Sheet, No. 21 to 27	— 05	@	— 6¾
COPPER.—Duty: Sheathing, 3½c ₱ lb; Pig and Bar, 2½c ₱ lb			
Sheathing, ₱ lb	— —	@	— 30
Sheathing, Yellow	— 20	@	— 21
Sheathing, Old Yellow	— 10	@	— 11
Composition Nails	— 21	@	— 22
Composition Bolts	— 21	@	— 22
TIN PLATES.—Duty: 25 ₱ cent. ad valorem.			
Plates, Charcoal, IX, ₱ box	12 00	@	— —
Plates, I C Charcoal	10 00	@	10 50
Roofing Plates	10 00	@	10 50
Banca Tin, Slabs, ₱ lb	— 10	@	— 42½
STEEL.—English Cast Steel, ₱ lb	— —	@	— 15
QUICKSILVER.—₱ lb	— 55	@	— 60
LEAD.—Pig ₱ lb	— 7½	@	— 8
Sheet	— 10	@	— —
Pipe	— 11	@	— —
Bar	— 9	@	— 9
ZINC.—Sheets, ₱ lb	— 10½	@	— 11
BORAX.—California, ₱ lb	— 28	@	— 40

Machinery.

THE WILSON
Patent Steam Stamp Mill.



This extraordinary Mill, now so justly popular in the East, is now offered to the miners of the Pacific Coast. Having been in operation now for about eighteen months, the Company feel confident that the

WILSON STEAM STAMP MILL,

For Durability, Efficiency,

AND ECONOMY OF WORKING,

HAS NO EQUAL.

The Wilson Steam Stamp Mill is the only Steam Mill that has had the severe ordeal of practical working, and proved itself eminently successful. It is now in operation in several of the Eastern States and Territories, and gaining an envious popularity. The whole machine is so simple as to be readily understood by the most ordinary minds. In fact, its simplicity is its durability. The expense of crushing rock or cement with this Mill is less than one-half the expense of any other Stamp Mill, and less than one-half the cost. For further particulars inquire of

A. BICKNELL, Agent,
Nevada City, California,

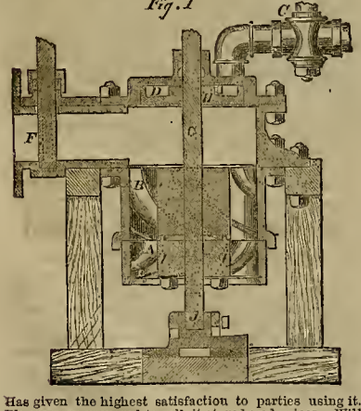
Or of THE WILSON STEAM STAMP MILL CO., 326 Walnut street, Philadelphia, Pa.

NOTICE.—All persons are hereby warned not to manufacture or use any Steam Stamp Mills that are an infringement on the Wilson Patents, as they will be prosecuted to the utmost rigor of the law.

F. R. WILSON,
20v19-tf Supt. W. P. S. S. M. Co., Philadelphia.

Lind's Improved Water Wheel

Fig. 1



Has given the highest satisfaction to parties using it. We are now prepared to sell it at reduced prices. Will also contract for all kinds of Machinery—Flour, Saw and Quartz Mill. All our work guaranteed. We will send competent men to put up our Wheels and Machinery. We contract for or do it ourselves. Our extensive acquaintance with millwrights on this coast enables us to furnish millmen with the best of workmen at short notice. Drawings for contracts furnished gratis. Send for circular.

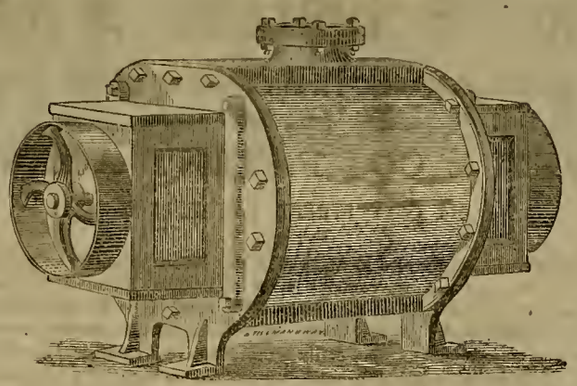
A. LIND, Millwright,
Pacific Iron Works, San Francisco.
Refer to John Sime and J. Haley. 19v19

ROOT'S PATENT FORCE BLAST ROTARY BLOWER

MANUFACTURED BY KEEP & BARGION,

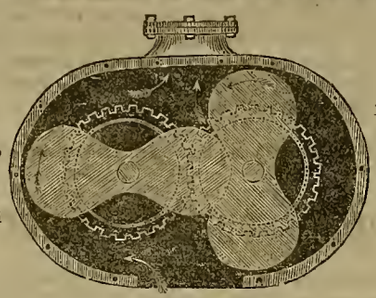
At the Globe Iron Works, Stockton, California.

Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

ADAPTED FOR **Smelting, Foundry, Mining and Steamships.**



REQUIRES **Fifty Per Cent.** LESS POWER Than any Blower Now in use.

One of these Blowers may be seen on exhibition at W. T. Garratt's Brass Foundry, corner of Mission and Fremont streets. They are also in use at the Almaden Quicksilver Mine; Gridley's Foundry, Gold Hill, Nevada; Ætna Iron Works, San Francisco, and many other places.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

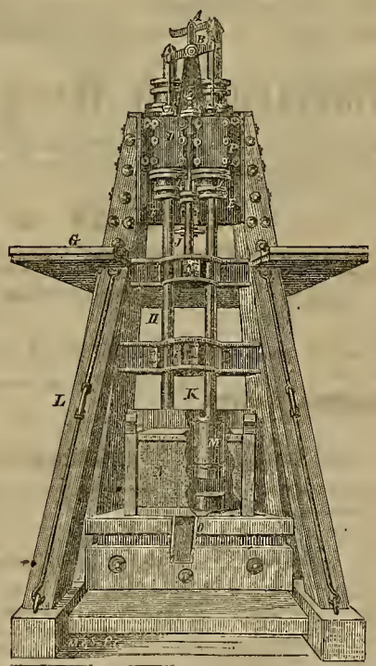
Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

For circulars and further information, address

KEEP & BARGION,
4v16-3m Globe Iron Works, Stockton, Cal.

TAYLOR'S IMPROVED

STEAM STAMP MILL.



This Mill is driven by a direct application of steam to the stamps. It saves from fifty to seventy-five per cent. of the cost of the ordinary stamp battery, performing the same amount of work,

Cost of Mill with a capacity of 25 tons per day, $2,500.

THIS MILL IS LESS COMPLICATED

THAN ANY OTHER IN USE,

And, consequently, much less liable to get out of repair. See illustration and detailed description in the *Mining and Scientific Press* of October 30th, 1869. For further information, reference may be made to PRESCOTT, SCHIEDELL & Co., Marysville, or address

GEO. A. TAYLOR,
19v19-1am3m San Francisco, Cal.

VARNEY'S
PATENT AMALGAMATOR

These Machines Stand Unrivaled.

For rapidly pulverizing and amalgamating ores, they have no equal. No effort has been, or will be, spared to have them constructed in the most perfect manner, and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

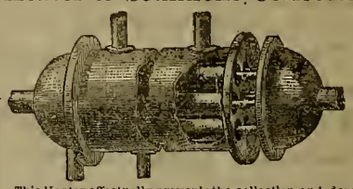
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces. Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing in a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others.—They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill men are invited to examine these pans and setters for themselves, at the office, **220** Fremont street.

1v1 San Francisco.

CROSS' COMBINED
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

REDUCED 45 PER CENT.,

Which enables the Vulcan Iron Works, McAfee, Spiers & Co., Risdon Iron Works, of San Francisco, Keep & Bargion, of Stockton, and Williams & Co., of Sacramento, the parties having the right to build them, to furnish these Heaters at greatly reduced rates. Send for Circulars to

WM. B. CROSS,
16v18-3m Patentee, Sacramento, Cal.

SPECIAL NOTICE.

TO DEALERS AND CONSUMERS

—OF THE—

H & L

AXLE GREASE.

Having received your liberal patronage and support during the last fifteen years, and desiring to further extend its consumption, and if possible meet the market of our Chicago friends, we have made a great reduction in prices, and from our long experience we will satisfy you that there is none BETTER, and through your liberal patronage that there is none CHEAPER.

HUCKS & LAMBERT,
144 Natoma Street.

Depot, 320 Jackson Street.

N. B.—We are prepared to furnish Bulk Packages to contractors on equally liberal terms.

WONDERFUL
Scientific Discovery.

THE GREATEST EVER MADE,

Having Baffled the Ingenuity of Chemists and Physiologists for Ages Past.

DR. CROWLY'S EMERALD HAIR BALM.

NO EXAGGERATION, but a stern reality, verified by the undersigned:

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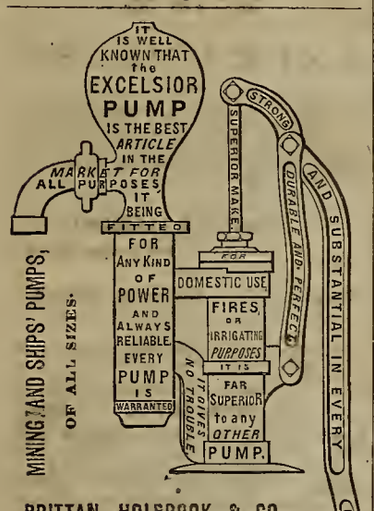
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1v16tf SAN FRANCISCO. 1868.

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United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs A. S. Hallidie & Co., Agents Morgan Crucible—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. N. ECKFELDT,

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Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

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Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs. A. S Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucibles of Dixon's make over Aduis, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

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MINING AND SCIENTIFIC PRESS.

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A Journal of Useful Arts, Science, Mining, Farming, and Mechanical Progress.

BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, DECEMBER 25, 1869. VOLUME XIX. Number 26.

Metalline—A New and Important Invention.

It is said in a New York paper that a number of scientific and practical gentlemen, connected with manufacturing and other machinery in that city, have been for several months watching the operations of an invention that aims at the entire abolishment of oils and all other lubricating material now used for boxes, slides, and every condition of motion where metallic friction is to be overcome or expected. It is also claimed that such a result has been fully achieved, and there are engines now running with this material, that, the proprietors aver, have worked to complete satisfaction for several months. Such, in general terms, is the claim of this novel invention. It is said to be the work of a well known scientific and practical gentleman, who has spent a great deal of time in working out this result.

The exact nature of the present invention is not given, for the alleged reason that patents are being sought for in several countries, which would be placed in jeopardy were any clear description of the materials and processes given. It may, however, be said in a general way, that the discovery—which has received the name of metalline—consists of such combinations and manipulations of various metallic substances as will make a surface on which the ordinary journals, axles, etc., will run with much less friction and heating than is due to any of the lubricants now in use. These, briefly, are the claims, and the inventor refers to a large number of trustworthy gentlemen who have examined and tried the substance.

The above sounds very much like "humcombe," although there may be something of value in it; and we shall soon know all about it, as the inventor assures the public that a company has already been formed to enter largely into the manufacture and sale of the new lubricant as soon as the desired patent protections have been secured.

THE *Overland Monthly* for January has been received, and is well up to the standard. It commences with an excellent article on San Francisco, which tells us in public what we are willing to confess only in private—that we do have some faults. "Centerpole Bill," and "The Luck of Roaring Camp," are very readable domestic stories. "Frau Trudchens' Dream" is very good. "Some of our Birds" tells us something of a subject of which we ought to know more. The other articles are generally good.

THE TABLE OF CONTENTS of this and other numbers of the present volume will be found on the last page. A perusal of the index gives some idea of the large amount of valuable information stored up by those who read or peruse this journal.

A NEW PAPER.—The *Evening Tribune* made its advent on the San Francisco stage this last week, supported by a brilliant troupe of gaily clad newsboys.

Patent Shaft Coupling for Vehicles.

Often much trouble is experienced in removing the shaft from a vehicle from the fact that the pins or bolts of the coupling have become rusty, and adhere so obstinately as to make requisite the use of considerable patience and of considerable force applied by means of a wrench for their removal. In all our couplings hitherto devised, moreover, we have more or less of the noisy rattle which is so disagreeable, especially to nervous people, or to persons driving out in pursuit of health.

The inventor of the coupling, shown in the illustration, for which we are indebted to the *American Artizan*, thinks he has completely obviated both of these troubles, having so constructed it that the shaft can easily be detached by hand in half a minute, and that no noise results from its use.

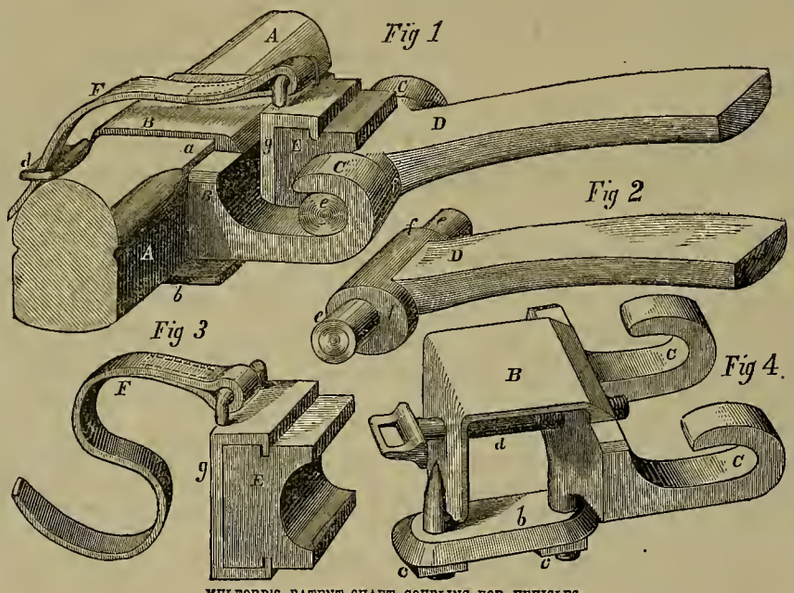
In the cut, Fig. 1 shows the coupling attached to the shaft; Fig. 2 the shaft; Fig. 3 the elastic pad which retains the shaft in the socket of the clasp, Fig. 4, which attaches the coupling to the shaft.

Where the coupling is to be attached, the axle, A, of the vehicle has squared portions, a, to receive the clasp, B. This is held in place not only by the plate, b, screwed up against the under side of the axle by means of the nuts, c, (see Fig. 4), but also by the screw-bolt, d. The clasp, B, has two hooks, C, which extend forward and hold the cylindrical lugs, e, of the shaft, D, any side motion of the latter being prevented by the shoulders, f.

A pad, E, of India-rubber is secured to a metallic back-plate, g, and placed behind the shaft-iron, thus holding it in place, while the pad itself is prevented from slipping to one side or the other by the ends of the hook, C, which embrace it on either side. To the back-plate, g, there may be attached a leather strap, F, the end of which passes through the slot in the head of the screw-bolt, d, and thus prevents it from turning.

Now as the shaft-iron is held in the hooks, C, with an elastic pressure by means of the india-rubber pad, E, there can be no rattling or jarring when the vehicle is in motion. Moreover, the elasticity of the pad enables one to remove it without the exercise of any great force, and in a short space of time.

These couplings being strong and durable, can be used for express, truck, or any heavy wagons, as well as for light carriages and sleighs.



MULFORD'S PATENT SHAFT COUPLING FOR VEHICLES.

The inventor, whose patent is dated August 4, 1868, is Mr. I. H. Mulford, of East Orange, N. J.

STATE FAIR PREMIUMS.—The following awards of gold medals are reported by the Special Committee: John Hall, Alameda, best display of stock; Norton Bush, San Francisco, medal for fine arts; N. P. Cole & Co., San Francisco, best display of furniture of California wood; I. N. Hoag, cocoons, mulberry trees, etc.; H. M. Bernard, Sacramento, carriages, California made; Capital Woolen Mills, Sacramento, cloths, cassimeres, etc.; J. R. Nickerson, Placer county, fruit of all varieties. A special gold medal was awarded to S. B. Whipple, San Mateo, for display of Hambletonian stock; also to Huntington & Hopkins, Sacramento, for hardware of California manufacture.

SALE OF THE UNION HILL MINE.—It is reported by telegraph, under date of the 23d inst., that the Union Hill Mine, Grass Valley, went into possession of the Pacific Mining Company, of London, on that day, having been recently sold to them by Mr. Findley.

The Mines Our True Source of Wealth.

We have received an interesting paper on this subject, which, however, is rather too lengthy for our columns, especially as the subject has been treated so fully of late. The writer is an "old miner," who zealously defends the importance of his profession, at the same time that he is alive to the defective manner in which this important industry has been conducted. His indignation has been excited of late by articles which have appeared, and he reflects severely on those persons "who affect to ignore the existence and importance of the mines, and who sneer at the efforts, trials, successes and failures of the poor miner."

In the course of the article it is shown how the mines originally attracted people to our coast, built cities and towns, gave rise to and sustained commerce and agriculture, and rendered the Pacific Railroad first a necessity and then an accomplished fact. The dependence of the several branches of industry on the mines is minutely traced out. "Without the mines," he says feelingly, "there would be no churches, no schools nor children to fill them, no 'school-marms' nor people to court them."

The history of mining on this coast is spoken of briefly. It is proved that the mines are by no means "played out;" on the contrary, all indications tend to show that we have merely commenced to get at the subterranean treasures of the country. The causes of the diminished production are shown to be incidental and not to arise from the exhaustion of the mineral stores.

The writer claims that the present dull times are, in part at least, due to neglect of the mining interests. If people, he argues, had remained faithful to these, and not gone headlong into land speculations, expecting thereby to grow suddenly rich on the completion of the Pacific Railroad, we should now be in a much healthier condition. And in this connection he shows the injury done to the country by the wholesale land-grabbing.

In conclusion, the writer appeals to the public to give more attention to legitimate mining. He shows that in spite of mismanagement the mines are no worse investments than are other kinds of business. [By the way, we see that an Eastern statistician has computed that 95 per cent. of our merchants fail some time in their career. —ED.] "We do not advocate," he says, "the neglecting of any legitimate business, nor do we advise a general stampede to the mines, but we do ask that the mining interests receive the attention they are entitled to."

LARGE droves of cattle from Texas are reported *en route* to this State.

Communications.

What are Metals?

[Written for the Mining and Scientific Press.]

Editors Press:—Some time ago I commented in your valuable paper on the question: *What are metals?* and concluded that metals are elementary bodies, which are good conductors of electricity at common temperature (providing they are in a sufficiently condensed state); but this distinction would not be of much benefit, since the conducting power for electricity seems mostly to depend upon a certain particular condition or density; for instance: glass and resins, in a solid state, are insulators. When wet, they will conduct electricity. [The water in which they are enveloped forms the conductor—not the glass, resin, etc.—Eds. Press.] All the gases are insulators; but all ignited gases or flames are conductors. Water is a conductor; but dry ice and dry steam do not conduct electricity. Carbon is an excellent conductor, if properly prepared; but crystallized carbon or diamond is an insulator. Metals, although they are the best conductors, will not conduct electricity when in a finely divided state.

I do not see much benefit to be derived from the above distinction between metals and non-metallic elements, because some conduct electricity in one condition, and others under different circumstances.

Far more important would it be to answer the other very curious question, put by the same author, namely: *Whether ammonium is a metal?*

Ammonium (NH^4) is composed of one atom of nitrogen and four of hydrogen; and as metals are generally considered to be elements or bodies that cannot be decomposed, it may seem out of place to admit a compound among their number; but I will point out the reasons that will compel us to do so.

The so-called ammonium (NH^4) forms an amalgam with quicksilver, under precisely the same conditions, from the corresponding salts, as sodium amalgam. If we submit a solution of common salt (chloride of sodium) to the decomposing action of a galvanic battery, the sodium will be attracted to the negative plate, and if any quicksilver be present, it will form an amalgam (sodium amalgam) which will adhere to the negative electrode. If we try the same experiment by the use of sal-ammoniac (chloride of sodium) instead of common salt, the same action will take place; the mercury at the negative electrode will swell up to many times its former size, and form an amalgam of ammonium. This amalgam has the same appearance and possesses the same corresponding affinities as the sodium amalgam.

According to natural laws, only metals are able to form amalgams with quicksilver. We are, therefore, obliged to call ammonium a metal; and, furthermore, ammonium being a compound, we have the right to say the same of sodium; and, in fact, we must admit the possibility of all the other metals being compounds.

In one of my previous communications I proved by a very simple experiment that the sulphate of copper cannot be considered as being composed of oxide of copper and sulphuric acid ($CuO + SO^3$), but of metallic copper and a higher oxide of sulphur ($CuO + SO^4$); and SO^4 being a compound, we have a right, according to the dualistic theory, to consider the metal copper likewise a compound body. Many other proofs could be given on the same point.

That we have not been able to decompose metals is no reason to infer that it cannot be done; but what the different metals are composed of, and how they can be decomposed, I leave to wiser men than myself to determine. Edward Pique.

A Rutland (Vt.) slate pencil company has recently put up a machine which will cut, it is said, 20,000 pencils in an hour.

Stetefeldt Furnace vs. Capital.

[Written for the Mining and Scientific Press.]

Editors Press:—The success of the Stetefeldt furnace, as reported in your issue of the 11th inst., is of a practical value to Eastern Nevada, infinitely surpassing the discovery of any mining district that has hitherto been made in it, not excepting White Pine. There is no lack of ores in this part of the State of a grade considerably above the average yield of the Comstock lode, which are now disposed of with no other recognition or notice than that contained in the trite laconicism, low grade ores, which has become synonymous with irredeemably unremunerative.

As a miner, I hail the advent of a brighter era which the inauguration of this furnace introduces. Its direct pecuniary advantage to the producer of ores is immense, while its indirect effect is no less to be appreciated. I allude to its tendency, if its benefits are rightly appropriated and applied, to release to a considerable extent the miner from his dependence on outside capital. Such independence, properly asserted, would be the surest way to tempt capital, and secure its subserviency to the interest and progress of mining.

Who can estimate the difference in the aggregate of a net increase of from $12 to $20 per ton on all ores will produce throughout a region of country, embracing an area of at least 1,000 square miles, and everywhere teeming with the luxuriance of argentiferous minerals? It is only by the aggregate of calculations of individual mine owners, from their several stand points, submitted as a basis of induction, that any approximation to the real issue can be obtained.

Associate with this great stride in metallurgy, the principles of coöperation in mining, and its inevitable tendency would be to declare the miner comparatively independent of capital, as an indispensable condition of his success.

The principle of coöperation proceeds, so to speak, on natural facts as a basis, and arrays its forces, which are real, against the assumptions of that abstract thing denominated capital. That it has value as a force inseparably its own, no one would attempt to deny; but that it has arrogated to itself powers and importance not legitimate, is equally incontestable.

To accomplish without capital what capital was considered an indispensable condition of, is to claim effectually the principal channel on which it relies for its support; and in proportion as this opposition is extended and succeeds, will be the diminution of the power it possesses until reduced to its own legitimate sphere.

In precisely the same ratio, as the fictitious power of capital is reduced, will be the increase of that power or forces subverting it. There is no surer way to demolish a fictitious thing than by removing the supports, and impeding and diverting the contributory channels which are essential to its being. If the absolute forces upon which the generation of capital depends, are agreed that its domination shall cease, and adopt proper measures to such an end, its mandate must be obeyed, and capital can offer no successful resistance to its decrease; but I scarcely need say that truth and reason must be the basis of its action.

If coöperation in mining developments, on a properly adjusted scale, succeeds, metallurgical successes in working the ores, which we have ample reason to expect will take place from time to time—the result of experiments in a few judiciously selected fields, accompanied by a reasonable reduction in the prices of all merchandise—such an impetus will be given to this industry that greater forces would be necessary to check its progress than now appear to be necessary to set it in motion. It needs no effort at demonstration to convince any one at all conversant with the facts that the high charges for milling ores, and the large deduction for wastage in their reduction, has hitherto been the greatest impediment to mining. A charge of $40 per ton for milling, and an arbitrary deduction of 20 per cent., only foot up the modest amount of from $60 to $75 per ton on ores varying from $100 to $175; whilst by Mr. Stetefeldt's figures, furnished in your article, the maximum of loss, if applied to $175 ores, would amount to no more, including the actual expenses of milling where wood is cheap, than $35 per ton. Of course the difference here spans the margin of two extremes—that of reducing your ores at a custom mill, and that of having a mill of your own, which difference legitimately belongs to the credit side, instead of the debit side, of mining accounts, and no efforts should be spared in assigning to it its proper position. Its effect, rightly applied, would be incalculable. Pro and Con.

Ellsworth, Nev., Dec. 17, 1869.

New Processes for the Reduction of Rebellious Ores.

[Written for the Mining and Scientific Press.]

Editors Press:—It is to be regretted that the discussion of a subject most vitally interesting in connection with the progress of California, should be so much embittered by acrimony. Whether this arises from personal feeling or from the conflicting interests of the contending parties, the result is alike injurious to the cause of progress and to their own dignity. This has been made to me the more apparent from the communication on the above subject in your issue of December 4th.

The writer, while asserting many facts connected with the practice of metallurgy, inseparable from extending operations, betrays an amount of querulousness which injures more than benefits the legitimate developments which he espouses.

Though evidently himself not deficient in prejudice against such ideas as may conflict with his own, he gives utterance to many truths; not the least of which is his allusion to the uncertain, vacillating and vexatious actions of the United States Patent Office in the granting or rejecting of patents bearing upon the same matter.

Whether such action is to be attributed to the unfortunate rotation in office system, and to the consequent lack of information possessed by those officials, or to causes which it might be libelous to accurately define, I am unable to say; but the fact is undeniable, that patents embodying general principles which had been anticipated in previous patents have been granted, while positive improvements have been rejected. Of this, the patent of Dr. Rae, mentioned by your correspondent, is a notable instance.

With regard to the number of new processes proposed, doubtless many are utterly valueless; but to deprecate all such endeavors is to check the progressive genius of the age. When it is remembered that Dr. Lardner, whose talent in mechanical and chemical science was undoubted, declared that trans-Atlantic steam navigation was an impossibility; when other men of equal renown declared that the passage of a railway train through a tunnel, a mile in length, would suffocate all the passengers; that a speed exceeding thirty miles an hour would interfere with the healthy action of the lungs of passengers, we can without serious offense conceive that "C. H. A." may be in general error as to future discoveries in chemical metallurgy.

That the chemical action between the ingredients of the "Fonda" or other Mexican process generates electricity is apparent to the merest tyro in that science. The question then arises, does such electrical action retard, or does it aid and facilitate, the operation? The discoveries of Sir Humphrey Davy most decidedly confirm the idea that it aids the process. This being the case, it is probable, to say the least, that the more energetic application of electricity may the more energetically assist the operation.

The assertion "that there is no ore of gold or silver on this coast or elsewhere that will not yield to the intelligent application of some one of the known processes," is true enough; but the further assertion "that no important discovery or invention in metallurgy, other than purely mechanical, has yet been made, or may be looked for for some time," arrogates a superiority of knowledge, somewhat self-sufficient. Probably it is because "C. H. A." has not sufficient time, or has not sufficiently arranged his ideas to enable him to perfect some embryo process at present culminating in his mind. How far his exception of Kustel's combination of Plattner's and Patera's processes may arise from some similarity of his own conception or adaptation, remains to be seen.

Bearing in mind that subjects affecting the interests of the community at large should be discussed in a calm, logical and dispassionate way, I should regret if the flippant manner of your correspondent should have betrayed me as to the exhibition of any acerbity of feeling. I am well aware that ridicule is no argument, and that arrogating too much to one's self is always injurious to the end in view. I would also add that it is impolitic to announce too publicly such operations as I may be investigating. I would merely deprecate the premature condemnation of processes as yet unknown to the condemner. John Scott.

San Francisco, Dec. 20th, 1869.

Mines in El Dorado County.

[Written for the Mining and Scientific Press.]

Editors Press:—Being a constant reader of your valuable paper, and seldom finding any notice of the mines of our county, I have taken the liberty of trespassing on your valuable time and space by sending you a few items.

We have several valuable mines of quartz in the immediate vicinity of Placerville. The Shepard mine is at present taking the palm for abundance of rich ore. I have been informed that it is paying $50 per ton.

The Epley mine, at present lying still, is a first class mine, and is on the same range as the Shepard.

The Church Union mine, lying south of here about seven miles, is one of the oldest in the State. The parties owning this mine have been sinking for the last six months, and, I understand, have developed a body of good ore at the bottom of the shaft. Mr. Church is the Superintendent.

One mile west of the Church Union mine is the Pocahontas, an old discovery, having been worked with varied success since 1850, first by Mexicans, and since by parties with limited means. The property is now in the hands of a company, and shows a flattering prospect of success. I was surprised to learn, however, that notwithstanding the mine had been worked so long, the shaft had only reached a depth of two hundred and fifty feet. No work is being done just at present, but I learn from the Superintendent, Mr. Burlingham, that the stoppage is only temporary.

Four miles south of the Pocahontas is the Havilah mine, which is, I believe, the first quartz mine discovered and worked in this State, having been located in 1849, and worked in 1850 and since with varied success by different parties. At present it is being worked by the Havilah Mining Company, who have a fine forty-stamp mill running by water power; the shaft has reached a depth of 350 feet, developing a fine body of good ore, which I was informed by the Superintendent, although somewhat refractory, was yet paying well. I see with pleasure that this Company is taking advantage of all the late improvements in mining and milling.

Forty-Niner.

Placerville, Dec. 13, 1869.

Green Tarlatan Poisonous.—M. Robierre has analyzed a sample of this fabric obtained at Nantes, and found it to contain 10.3 grammes of Schweinfurt green—arsenite of copper—equivalent to 6.03 grammes of white arsenic, to the square meter. A full dress made of this tissue, therefore, would contain no less than 391.4 grammes of copper arsenite, equivalent to 229 grammes of white arsenic. At every shaking of the tarlatan, even when very slight, clouds of a greenish dust came off.

Mechanical Progress.

New Shape for Screw-Taps.

Prof. Beylich translates from *Polyt. Centralblatt* a description of the method of cutting crew-taps at the large machino shop at graffonstaden. We quote a portion of tho article:

"The action of an ordinary tap doos not produce regnlar ohips; it does not leave room enough for them, uor allow tho oil easy access to the working-edges. Some improvements have hoen made, but the cylindrical or conical shape of the nuclens of the tap has heen retained. No tap, however, having a nucleus of a circular section, can over work advantageously. Tho tool ought not to touch the surface of the screw to he cut, hut just with its edge; and the cutting edgo ought to he freo at the back, and must thereforo have a tooth-like shape. The peculiar mechanism, attached to the turning lathe at Graffenstaden, does not turn the piecos circular, but so that it obtains a wavy surface. Tho cuttiug of the thread ie afterwards dono in the usual manner. Thus a screw of a wavy eection is produced with alternating swells and recesses, each of which extends over the whole length of the piece. The number of swells corresponds to the number of teeth intended to be given to the tap. To finieh the tap is only necessary to cut out one-half of each swell hy a planing or a milling machine, to a depth correspouding to the reqnired length of the teeth."

Machinery for the Andes.—Manning, Wardle & Co., a Leeds firm, have constructed the locomotives and other machinery for the Cerro de Pasco Railway in South America. Everything is to be transported on the backs of mules over 70 miles of road, which is impassable by any other means. *Engineering* for Nov. 26th says: "The maximum weight allowed for any one piece or package wae 300 lbs., and no object was to exceed 7 ft. in lengtb. The engines have outside cylinders 12 in. diameter, and are carried upon six wrought iron coupled wheels with steel tyres; the tanke are of tbe "eaddle" form resting upon the boiler barrels. As we expected, some clever echeming has been required to conform to tbe stipulated weights, of course the hoilers, tanke, frames, and wheels, and in fact all beavy parts go out in pieces; for instance, the cylinders and steam chests, usually cast in one, are in this case made in five pieces, the frames are made in sections, and the wheels, tyres, and axles are all separate. Messrs. M., W. & Co., have also constructed a fixed workshop engine, and boiler, together with a wheel latho, drilling machiue, lathes, blowing fans, and smiths' hearths and tools. In this case the maximum weight allowed was only 150 lbs. for each package. This necessitated the fast headstock of the wheel lathe being made in no less than fourteen pieces, and yet these are eo contrived that an ordinary observer would not notice anything special about it. A staff of hoiler makers and fitters in charge of a leading erector have been engaged to go out to Peru to erect the engines on their arrival."

Lathe Making—the Spindle.—From the correspondence of the *Engineer*, we extract the following: First-rate emiths are not always able to produce a sound lathe spindle. The iron is first forged into the required shape, and a piece of double shear eteel is welded round it to form the neck or bearing. Should this not be perfectly sound, it is pretty sure to "fly" in hardening. The bushes are steel cylinders, forged of douhle shear steel, and lapped with the best iron. Wben these eteel bushes are annealed they go to the turner, and are turned parallel outside. Then they are enbjected to a red beat, and snddenly immereed in running water, and sbould the slightbest flaw occur in the weld, they crack and have to be thrown aside. If all goee well, they are driven into the headetock bored to receivo them, and are lapped true and clear, or, in other words, polished by means of a lead lap running at a remarkahle speed. The spindle is annealed, then turned, heated to nearly a white heat, and plunged into a etream of water icy-cold. This is a eevere trial of the emitb'e work. The next process is that of polishing. This is effected hy placing it in a latho and causing it to revolve elowly, against an emery wheel running at considerable velocity in a contrary direction, until it is highly polished. Thue the spindle is a perfect "fit" when pnt into the bearings.

Whitworth's Method of Provino Guns. This consists, as Mr. W. says, in preventing tho shot from moving when tho powder is ignited, the gases generated hy tho explosion escaping only through the touchhole. About ono-sixth of the regular powder charge fired in this way gives the samo strain to the gun as a full charge fired in tho ordinary manner. To prevent the movement of the ehot, a screw is cut on the periphery of tho gun at tho muzzle, and on it is fitted a ecrewed cap having a eolid end. Tho gnn is loaded with a cartridge of the ordinary length, hut containing one-sixth of the regular charge, and supported by tin discs in the center of the bore; a flat-fronted shot, with tight wads to prevent any escape of gas, and a round steel har reaching from the shot to the end of the horo, are then introduced, and the cap with the solid end screwed on. The gun is then ready for firing, after which my measuring instrument is introduced into tho bore, and any enlargemont to the 10-100th of an inch in extent may be ascertained. If there he no enlargement, the powder charges may be gradually increased, until a slight enlargement has been produced. The real strength of each gun is thus positively ascertained, and this strength I would have recorded and stamped upon each gun.

Patent Frictional Gearing.—The *Engineer* for Nov. 26th, describes and illustrates a new frictional gearing with india-rubber facing, lately invented hy a Mr. Hall. We quote: "It consists simply of a thick elastic band fixed in a groove upon tho working face of the wheel, whether bevel or spur, and the power of friction is regulated in all cases hy adjusting screws fixed to one bearing of each set. Among its special advantages are the facility and safety with which the gearing of spindles may he thrown in and out of action at the highest velocities, it being applicable to couplings as well as to wheels of all classes. Especially will it he found advantageoue where noiseless, smooth, and steady action is required at great speed. We understand the gear has been tried in a cotton mill, and has proved a complete success. Apparently the great velocity at which it can he driven enables it to accomplish more work, with less expenditure of power, than can he effected with cogs; and as an economizer of power, cost, and maintenance, it should prove itself worthy of attention by all who employ machinery.

An Ingenious Crank Motion.—A new velocipede, described and illustrated by the *Scientific American*, has a crank which is so constructed that it lengthens itself to its maximum at the moment the leg is extended, and ehortens to a minimum as the foot passes under the center; therehy making the most of that muscular exertion which tends to propel the vehicle, and lessening that which does not so tend. We quote that portion of the description which shows how this is done:

"A grooved circle is attached to the standard, eccentric to the action of tbe wheel, and strengthened by lateral braces. The arm of the crank passee through a hole in the end of the axle, but is not fastened to it. In tbe groove of this circle plays a small friction roller attacbed to the crank behind the foot-piece, which causes the crank to slide through the hole in tbe axlo to and from the center during each revolution; its nearest approach to the center being during the time it passes under the center."

Steam Gauges.—The *Engineer* has the following: "A steam pressure gauge can only be used for three purposes. The first is to tell accurately the pressure in a steam boiler at any moment when the water is hotter than 212 deg.; tbe eecond is to tell variations in tbe steam pressnre from time to time; and the third ie to bring in money to the makers. We regret to eay that the last point ie more studied than the others; indeed, eo mucb etudied that the value of the modern mercantile steam gauge as an index of the pressure within a boiler at any moment is very small indeed."

New Notes in Photography.—A thin layer of gelatine made eensitive with bichromate of potash ie exposed to light under a photographic positive, and the partsacted upon by the light become insoluble in water. The gelatine ie then immereed in water, and the parts which have not been rendered insoluble, swell up, producing a picture in relief, from which a plaster cast is taken. From this an electrotype copy can be made which can be used as a eeal. The process may also be employed for obtaining electrotypes for the use of tbe printer.

Scientific Progress.

Geological Time—A New Fact.

We have given in the Press notes of eome of the new points established by Dr. Carpenter and Professor Thompson, during their last year'e cruise in the Lightning. We find the following statement in the *Engineer*, in connection with the facts noted in regard to the ocean depth at which life is found, and the erroneous idea which has obtained in regard to the uniform temperature of the deep sea:

"It was found that a difference in bottom temperature between 32° and 47° existed at points only eight or ten miles distant from each other, beneath an uniform surface temperature of ahont 52°; and that where this was the case in the cold area the bottom was formed of harren sandstone, mingled with fragments of older rock, and inhabited by a comparatively ecanty fauna, of an arctic or boreal character, while in the adjacent warm area the bottom surface was cretaceous, and the more abundant fauna presented character istics due to the more temperate climate. Hence an upheaval of a few miles of the sea bottom subject to these conditione would present to the geologist of the future two portions of surface, totally different in their structure, the one exhibiting traces of a depressed, the other of an elevated temperature, and yet these formations would have been contemporaneous and conterminons. Wherever similar conditions are found upon the dry land of the present day, it bad heen supposed that the high and the low temperature, the formation of chalk and the formation of sandstone, must have been eeparated from each otber by long periods, and the discovery that they may actually coëxist upon adjacent surfaces has done no less than strike at the very root of many of the customary assumptions with regard to geological time."

Measuring Vibrations by Electricity. Prof. Le Roy Cooley gives, in the *Journal of the Franklin Institute* for November, the result of some experimente upon the relations of tho tones of stringed instruments, carefully made in pursuance of previous hints of the possibility of determining them by means of electricity. The actual pitch of all the tones in nearly tbree octaves of the piano, were determined. We quote: "Tho vibrations of the wire are made to occur in a vertical plane opening and closing an electric circuit with corresponding rapidity, and a dot is made upon the moving paper at the moment when the lowest point in tbo vibration is reached. The experiment begins wben the wire is above its line of rest: the first dot, therefore, represents one-half of one complete vibration. Should the experiment end when the wire is at the highest point in its motion, the number of dots would sbow the exact number of complete vibrations made; but since it may end wben the wire is at any point of its path, there may be a possible error of less than one-half of a complete vibration in an experiment one second in length. As the time is lengthened, the error is diminisbed; in a registry of five seconds the maximum error would be less than one-tentb of one vibration per second.

The precision with which the laws of vibration may be verified by tbe use of this instrument is in the bighest degree satisfactory. However numerous the repetitions of an experiment may he, the registry varies only by a single dot. Moreover, it makes the law rest upon no comparison of eounde produced by the vibrations, nor upon any other effect of the motion, but upon the vibrations themeelves, wbose numerical relations are directly ehown. Vibrations, sonorous or otherwise, are thue equally the eubject of experimental inveetigation."

Hydrogenium Again.—The alloys of palladium with other metals, are aleo found to abeorb hydrogen when the eecond metal does not constitute more than half the mixture. The alloys all expand by the absorption, and afterward contract, as was tbe case with the palladium wire; but unlike that, they contract only to the original lengtb of the wire. The mean of eeveral experiments with different alloys gave 0.733 as tbe figure which ie taken provisionally as the approximate density of hydrogeninm,

Antiquity of Man—The Summing-up.

Dr. Karl Vogt, of Geneva, at a recent meeting of German naturalists and physicians at Innsbruck, summed up the result of the congress of palæontologists. We condense a portion of his remarks:

"There is no longer any doubt that man existed in Europe—probably the latest peopled part of tho world—at a time that the great southern animals, the elephant, the mammoth, rhinocoros, hippopotamus, were found there, which are now extinct. It is equally certain that posterior to the advent of man the straits of Gibraltar, of Dover, and the Dardanelles, as well as Sicily and Africa, were still united hy isthmuses; the whole Mediterranean area was separated from Africa hy a sea in the basin of Sahara; the Baltic was a sea of ice covering tho whole of tho low levels of N. Germany and Russia, and cutting off Finland, Sweden, and Norway, into what would have heen an island but for its junction with Denmark. The researches of Lartet in France, of Fraas in Germany, and of Dupont in Belgium, have proved that this period was succeeded hy another, in which men hunted in the countries of Central Europe tho reindeer and other arctic animals, in an arctic climate, and surrounded hy an arctic flora. Our primeval Europeane were savages in the fullest sense. They were cannibals, as has heen lately shown by researches in Copenhagen. The lake villages in Switzerland, on the other hand, show that agriculture and the pastoral life flourished whilst the metals were still unknown. It can he shown, moreover, that our civilization came not from Asis, but from Africa; and Heer has proved that the cultivated plants in tbe Swiss lake villagos are of African, and to a great extent, Egyptian, origin."

The "Meteoric Shower" of the August Eolipse.—Prof. Alfred Mayer thus remarks upon the bright points traversing the telescopio field of view during the eclipse of August last; which points were noticed and reported hy various observers:

"During the month of September, 1869, I was running a meridian line for the foundations and piers of the Sayre Observatory; and on the afternoon of two days, while taking altitudes of the sun with a theodolite, I observed bright, star-like points rush into the sun's image with ahout the apparent velocity of shooting-stars. The similitude to a meteoric ehower was perfect, even to the *trails* left by many, while others appeared to burn out hefore they reached the sun's limb. I immediately referred it to its real cause, viz: the flight of minute insects across the field of view. The supposition was confirmed, on withdrawing my eye from the ocular, by observing clouds of minute flies or midges, with thin iridescent wings, flashing in the light of the sun. Although more of interest to naturalists than to astronomers, I will add tbat on two evenings of the past week while examining the moon, hetween the hours of eight and eleven, I have seen birds crossing the moon's image, (which entirely covers the field of view,) at the rate of about eigbt in a minute. They were all going eastward."

Alloys Chemical Compounds.—A mixture of bismuth, lead, tin and cadmium, in the proportions of 7½, 4, 1½, and 2, melts at 151° Fah. Bismuth alone melts at about 500° Fah., lead at 600° or more, and tin at 440°. The *Boston Journal of Chemistry* says: "The fact that the melting point of tbe alloy is lower than that of any one of the ingredients, goes to show that alloys are, in some cases, to be regarded as chemical compounds, and not as mechanical mixtures. Other phenomena confirm this view; as the evolution of heat, when certain metals are melted together, and tho fact that the density of an alloy is not what it should be if the metals are merely mixed."

Duration of the Spark.—The time occupied by the electric spark is estimated by Mr. Wbeatstone uot to exceed the millionth part of a second. Yet a distinct photographic image ie obtained by it. A vein of water issuing from a small orifice, which appears to the eye as emooth as a stem of cryetal, if seen or photographed by the light of tbe electric discbarge, ie shown to he composed of drops variously disposed, and of varione forme, some being elongated, others flattened, and others almost spherical.

Mining Summary.

The following information is gleaned mostly from journals published in the interior, in close proximity to the mines mentioned.

California.

AMADOR COUNTY.

Kennedy.—*Ledger*, Dec. 18th: Work is being vigorously pushed on this mine under the new arrangement, and we learn that a vein of excellent quartz has been broken into within the last few days.

NEVADA COUNTY.

Perrin's Mine.—Grass Valley *Union*, Dec. 15th: Perrin's mine has not been worked for the past month. Yesterday the repairs were completed and the mine started up.

Departed Glory.—The big cylinder of the Rivot sulphuret works has been broken into small fragments, to be recast into useful articles at the Nevada foundry. It took 12 yoke of oxen to bring that cylinder from Colfax, and very little giant powder to break it up. The company to which it belonged was broken before.

Allison Ranch.—Same of 16th: Two hundred tons of rock from this mine has yielded $6,600, or $33 per ton. This is from the old "backs" of this played-out mine.

Idaho.—We yesterday saw a bar at Findley & Co's, from the sulphurets of the Idaho, valued at $2,700.

From the Ridge.—Same of 18th: At North Bloomfield, the Gravel Co. are getting everything ready for water. They have two Craig globe nozzles, which will pass 1,100 inches each. R. C. Black and others are also making all their preparations for work. In Eureka, the snow is 10 inches deep. Times are quiet; most of the mills have shut down for the winter. The Mutual, and Black & Young's are the only ones now running. The Mutual has a large ledge and the rock is good. At the Black & Young mill last week, thieves succeeded in tearing up and getting away with the copper plates, which were in the sluices in front of the mortars. Mr. Black thought about 150 ozs. of amalgam were taken. The Birchville mine has closed for the season. They have an incline of 30 ft. running down to their ledge, and will resume work early in the spring. The Erie mine (the mill of which was burned during last summer), is idle, no work being done on the ledge. Rock taken out just before the destruction of the mill paid well. The Starr mine is looking well; parties are taking out rock, and the mill will soon commence running. At Cañon creek, the Gravel Co's dam is 60 ft. high, and as strong as timbers and bolts can make it. Three large iron pipes pass the water down to the head of the ditch, and are calculated to be of the capacity of 10,000 inches at 40 feet pressure. Work will be resumed at this point early in the spring, and the height of the structure increased five feet. At the proposed height the reservoir is calculated to hold sufficient water to run 3,000 inches day and night for four months.

New Diggings.—Same of 19th: It is reported that Jos. Gillwater and others have discovered rich gravel diggings two miles west of this place, to the north of the Rough and Ready road. There was considerable talk in town yesterday about it.

Relief Hill.—*Transcript*, 18th: We understand that the prospects for mining are very encouraging. Six claims are now being worked, and three of these are running tunnels, preparatory for work next spring. There are some fine claims in this locality which offer splendid opportunities for men of small capital.

Mining at Omega.—Same of 19th: Kidd & Co., having purchased the claims formerly owned by Dr. Teeple, have been preparing for work. One set of claims are now running, and others will be started soon. On Saturday a blast of 106 kegs of powder was discharged in one of the banks, which did excellent execution.

Mining at Chalk Bluff.—*Gazette*, 16th: Hussey Brothers have just completed fitting up their hydraulic claims and are ready for water. They have three pipes, with 2½ inch nozzles each. They will use 300 inches of water.

Quartz Location.—W. W. Nichols & Co. have located 4,000 ft. on a quartz ledge one mile north of Columbia Hill. The rock prospects $35 a ton. The owners are taking out rock sufficient for a milling test. The ledge is three feet wide, and is supposed to be an extension of the Grizzly Hill ledge.

Waiting on the Weather.—Miners were never better prepared for extensive operations than now, but for want of rain they are generally idle.

Magnolia Ledge.—J. F. Carr, owner of the Magnolia, at Willow Valley, who has been running a tunnel from Mosquito creek, has struck the ledge. It is from three to four feet in width, and the rock looks fine.

Nebraska Lead.—Same of 20th: The Kansas Co., who are running for the old Nebraska lead, are cutting a drift in the granite to get under the center of the channel. The Harmony Co. expect to resume work soon, and the Cold Spring Co., whose claims adjoin the Harmony above, had workmen employed last week in leveling off the ground with the view of starting an incline.

Resumed.—The West Eureka Co., at Pie Plant Ranch, supposed to be the extension of the Eureka, have erected machinery for hoisting and pumping, and resumed work on Saturday.

Patent for the Idaho.—The U. S. Patent for the Idaho mine was filed for record in the Recorder's office yesterday. The patent embraces a tract of seven acres and eighteen hundredths, and extends thirty-one hundred feet along the ledge.

Rich Specimen.—Same of 21st: We were shown yesterday, at the Bank, some fine specimens of gold-bearing quartz from the Banner mine. The rock is literally seamed with gold.

YUBA COUNTY.

Brown's Valley.—*Appeal*, Dec. 15th: It is well known that the Rattlesnake mine and mill have been closed for nearly two years; having been sold by the Sheriff at that time to Prescott & Scheidel for $1,600 to satisfy judgment. Within the last few days, George J. Bonroe and others leased the mine for three months, without consideration, and before they had succeeded in fully ridding it of the long accumulating water, they discovered a ledge of 20 inches in width which yields $40 to the ton. The new strike has given a fresh impetus to the Brown's Valley mines. The Sweet Vengeance mill is in operation. The Donnebroge mill is working rock from another mine in the valley, and paying tolerably well. The prospects brighten.

Brush Creek Quartz Mine.—This mine, during the last run of 90 days, reduced 1,105 tons of quartz, realizing $48,394.08, equal to over $41 per ton.

Arizona.

Plenty of Water.—Prescott *Miner*, Dec. 4th: Everything is wet. From this time to May we may count upon plenty of water. Many placer miners have already gone to work.

Big Bug.—The mill is still idle, but plenty of rich ore is being taken out. Placer miners were preparing to go to work.

Wickenburg.—A private letter says that the Vulture Mining Co's 40-stamp mill commenced work on the 28th.

Charles Otten, a miner at work in a gulch in Hassayampa district, found, one day last week, a piece of gold worth $18.

Sterling.—C. V. Beseler, the new superintendent, will start the mill in a few days.

Upper Lynx Creek.—A party of miners came to town on Wednesday, purchased supplies, and paid with gold dust. We learned that they had been making small wages with a rocker, on a bar below the cañon. They started back the same evening, and are by this time at work with sluices, by which they expect to wash out five or six dollars a day to the man.

Lower Lynx Creek.—Placer mining will soon be brisk. The Bashford Mining Co. will start in next week, and work will also be resumed in Jacksou, Lovejoy & Co's hydraulic diggings. Jos. Revoirs & Co. have already started to work. The Mexicans, at work near the old camp, are doing well.

Uncle Billy Pointer.—This old pioneer is going to start his arastra on Lynx creek. He is over 60 years of age, and will, we are glad to say, succeed in making a home strike this winter. He has got a rich ledge.

Colorado.

Mining Items:—Georgetown *Miner*, Dec. 9th: The Malahar lode has a solid vein seven feet wide and yields 50 per cent. lead and $60 per ton in silver. It is owned by a Chicago Company....The whole ore vein of the Comstock lode, Summit county, yields 25 per cent. lead, and the first-class portion of it 75 per cent.....The shipments of first-class ore from the Terrible mine have averaged one ton per diem for the last two months....On the Par lode, the shaft is still going down, and the vein increasing in width and richness. Mr. Brown made an assay of first-class ore that gave $9,308 per ton.

Tunnels.—The Burleigh drills can be heard night and day in the Goss and Burleigh....George Barrett is pushing things on the Helmick....Work is progressing finely in the Linn....The workmen on the Marshall are tearing into Leavenworth Mountain....A new tunnel has been located on Griffith Mountain for the purpose of cutting the Comet lode.

Idaho District.—The main shaft on the Franklin is 135 feet down. There is 90 feet of stoping ground. There are 800 tons of $75 ore out. A good wagon road has been constructed. Timber is abundant. The ore is crushed by a five-stamper, each stamp weighing 750 pounds. The furnace, a double reverberatory, is 18 feet long, and 11 feet wide. With all the drawbacks of a first trial run, the yield of the first seven tons treated was 697 ounces, 508 fine, coin value, $457.78. The Co. own in four different lodes. The whole cost of work done aggregate $30,000.

Briggs Mine.—Central City *Register*, 9th: The chunk of gold on Hussey's counter yesterday was in the shape of a sugar loaf, weighed 500 ounces, and was worth $10,000. This represents the net proceeds of the Briggs mine for one month, and is from second-class ore.

Items.—The Plumb Brothers are doing first rate with their new mill....The Winnebago mill is doing good work on Prize ore....The Coaley mine is yielding brittle silver in chunks as large as a man's fist. ....Work is about to start up on the Sparks lode, Nevada. It will be continued all winter, and in the spring a mill will be erected. The shaft is 80 feet deep and the vein is 18 inches wide.

The company owning the Prize lode is negotiating for the erection of a mill early in the spring at Black Hawk.

Idaho.

Items.—*Wave*, Dec. 9th: It is rumored that the crushing of ore from the Twilight mine at Black's mill gave $1,800 from 16 tons....Same of 16th says: The Schoenhar mill will start up on Baxter ore as soon as sufficient snow falls to enable teams to haul the rock.

North Idaho.—A correspondent of same writing from Warrens' diggings says: Quartz mining is at a stand-still, owing to constant litigations. The average yield of all the rock taken out has been $43 per ton. Our placer mines continue to yield fairly, the side claims paying well, the middle of the creek having been worked out. The camp will be open for Chinamen next spring. A new camp has been struck 10 miles north, which promises to be as rich and extensive as this has been. It is so late in the season that little can be done until spring. The claims that have been opened are considered to be good $20 diggings to the hand, when water is plenty.

Montana.

Gold Yield.—Virginia *Times*, Dec. 8th: The result of the runs on the John How mill at Summit is satisfactory. The Polar Star, Chickaman and Nelson lodes, upon working tests, have yielded respectively in the order named, $12 to $13, $9 to $10, and $20 to $25 per ton, and all show good width of vein and almost uniform quality of ore. No essay has been made as yet.

Connor Mill.—The Tom Connor mill, in Brown's gulch, has just completed another successful run. From 10 tons of ore from Christnot's lode, an amount of retort was realized that we hesitate to mention until an assay shall give us positive figures. Enough has been proven by actual working tests, to warrant us in believing this to be the richest silver district in the United States.

Pilgrim Bar.—*Independent*, 4th: Catching, Smith & Co. worked to the 25th ult., cleaning up for the last six weeks' run over $14,000, of which over $9,000 was net.... Last week Mr. Walker sold his mining interest to Con. Kohrs and Wm. Fly, for $6,000, gold.

Items.—Helena *Gazette*, 4th: Deeper and richer deposits have been discovered in Last Chance Gulch, and it is believed the thing is very extensive....At Blackfoot, most of the claims are closed for the winter. ....A new lode has been discovered in Dry gulch by the Wainscott Bros. The ore resembles the croppings from the Union, and is 20 ft. wide. The quartz men are on the lookout, and we are told that one gentleman has offered to erect a mill for an interest in the lode, giving the discoverers an equal interest in the mill.

Highland Gulch.—Cor. of *New Northwest*, Dec. 3d: The estimated yield to date is $250,000 from placers, and from quartz $50,000. The gold is the finest in Montana, assaying .994. There are five bedrock flumes in operation and being built. Forty quartz leads are recorded in the camp, three of which—the Ballarat, Nevius and Only Chance—have tunnels to them over 400 ft. long. The deepest shaft is on the Only Chance, 220 ft. There is one quartz mill—Prof. Swallow's; arastras, six, all of which have paid, we are told, but are now idle. The mill will probably start shortly. Four quartz leads have paid well.

Rochester Gulch.—In the spring of '68, Hendry & Woodruff, of Helena, erected a 10-stamp mill at a cost of $8,000 on the Watseka lead, from which they continued to crush until the spring of '69, the ore averaging $30 per ton. For some cause, the mill has been idle most of this summer. The report is now that it will soon resume.

The Madison Co. removed their 10-stamp mill from Hot Spring district to Rochester in the spring of '69. Its cost was about $10,000. It has been running almost constantly on Watseka, Julia Holmes and Niff ores, turning out from $300 to $1,000 per week.

There are three arastras working in the district, and the gulch (eight miles long) is demonstrated to contain wages diggings at least. A drain ditch 1,200 feet long has been run and bedrock struck at a depth of 40 ft., on a high point, prospecting rich. Sluicing will be begun next spring. The quartz of the district is rich.

Cedar Creek.—Same of 10th: A Missoula correspondent says: A big stampede is now going on at Cedar Creek, which runs into the Missoula river, 60 miles below here. The mines are up the creek 12 miles and are said to be rich. The creek has been prospected for 10 miles, and 25 cents to $2.50 to the pan has been found the whole distance. Sixty claims below and 30 above discovery were staked at last accounts. The gold looks like that from Kootenai.

Philipsburg.—Cor. of same: Rock coming out fast; enough in sight on Ullery & Merrill's 50 ft. to run a ten-stamper a year in everybody's opinion. The Sanders outfit have opened two ledges very finely, and are at work on the third and fourth with increased energy. Sanders is expected from California and Nevada the coming week with balance of the machinery.

Nevada.

COPE DISTRICT.

Mountain City.—Cor. of Elko *Independent*, Dec. 18th: The difficulty in the Mountain City Co. has been amicably adjusted. Work has been commenced in earnest, and in one week this mine will be able to furnish ore to keep the 10-stamp mill of Atchison & Drew constantly employed. The mill has been crushing ore from the Hamilton mine, 30 tons of which yielded 130 pounds of bullion.

A shipment to San Francisco of several tons of ore from the Crescent yielded $300 a ton.

Work progresses on the Argenta, Keystone, Belle of the West, and other mines.

Wyoming District.—We understand that a sale has been made of 100 feet in the Primrose ledge, to parties from below, for $800. The ledge is comparatively unprospected, but presents evidences of wealth on the surface. Some 2,000 pounds of ore from the Bruno ledge were received on Monday, for shipment to the Auburn mill, near Reno.

HUMBOLDT.

Battle Mountain.—Cor. of *Register*, Dec. 18th: Our mines are looking better every day, and lots of ore exit below have yielded satisfactory results.

Denton & Co. have discovered a rich galena ledge a mile east of town, supposed to be an extension of the Cherokee. The ore yields high, and the ledge is large. Near Butte mountain, Leidolph & Co. have opened one of the richest copper ledges in the State.

Butte Mine.—A shaft 60 feet deep has been sunk, and the ledge is six feet wide, three feet of which is ore. One hundred and five tons of ore from the drifts, worked at the Little Giant mill, yielded 435 pounds of fine bullion.

Railroad District.—Elko *Independent*, 18th: The Mammoth ledge is 30 feet wide, and yields ore, pieces of which will in a furnace turn out half their weight in copper, and more or less gold. The Rainbow and Maria Louisa ledges are considered first-class by all who have seen them. Railroad District is looming up.

REESE RIVER.

Lander Hill.—*Reveille*, 14th: During the past few days very rich ore has been developed in the Semanthe mine, owned by John Craycroft.

Mineral Hill.—*Enterprise*, Dec. 17th: A gentleman just in, informs us that the principal leads are looking better than ever. They have out a considerable amount of ore that will pay $500 per ton. A 10-stamp mill will soon be in operation.

Shipments of Ore.—Elko *Independent*, 15th: The average pulp assay per ton of ores shipped by Mineral Hill Co. is $483.

The Spencer Co. has shipped 13,100 pounds assayed value $307 per ton; hy Alta Co., 12,332 pounds, $292 per ton; Troy South Co., 2,420 pounds, $530.22 per ton; Austin Ledge Co., 12,656 pounds, $440.63 per ton.

The amount of ore on the dumps of the Spencer Co. is 200 tons, estimated to be worth $150 por ton. Ward & Co. have 500 tons which will average $250 per ten. There have been gathered from the hill about fifty tons of float rock and shipped to Austin, which averaged $150 per ton.

WHITE PINE.

WEEKLY MINING REVIEW.—*News*, 18th: The general prospect looks something gloomy, occasioned by the break of the leading companies, this week, by which a considerable number of men were thrown out of employment. The mines look as well as ever, and most of them better. The weather is favorable, and the mills are making good returns. The Consolidated Chloride Flat quit work Tuesday, on an order hy telegraph from San Francisco. The Aurora Consolidated and the Treasure Hill S. M. & M. Co: reduced their force

The Consolidated Chloride Flat is in the midst of a negotiation with other corperations. Ono is a mill affair, the other is to some extent the samo interest, hut identified with a large mining interest on the hill. A conselidation of iuterest is anticipated, which may be effected any day. * * We are inclined to bolieve that the persons holding the bulk of steck in all tho interests involved have an understanding, which is to depress mining interests on the hill.

The *Empire* says: We can assure our readers that the mines never looked hetter. Tho stoppage of work ou the Consolidated Chloride Flat had the effect to temporarily cast a gloom over the district; but when we have so mauy respectable mines that have merely been touched, and the promise of permanent ledges, rich in mctals, in every direction, we need horrow no trouble ahout the closing of the undergreund works of ouo company.

BULLION.—The shipment for the past week for some reasen has been very small, the total being but $32,269.05. Although there is now in tho office of Wells, Fargo & Co., ready for shipment, five bars valued at $6,843.59, we know of a large amount of bullion still remaining at the different mills.

The *News* makes the total amount aheut $1,500 more.

MILLS AND FURNACES.—*Empire*: The Chicago mill will be in operatiou hefore the 1st of January. It has a rock breaker which will hreak up a ton evcry five minutes....The Treasuro Hill mill has been repaired, and was again started up on the 6th, since which time five hars have heen taken out, value, $10,554.53. There still remains on hand $1,200 in amalgam. The company shipped ycsterday to Chicago seven bars, valued at $13,234.60. They now have on hand ore and material enough to run steadily through the wiuter. Their meuthly expenses will he less than $5,000. Mr. Field informs us that the Co. have shipped since Septemher 27, sixty-four bars, valued at $112,009.55....The Wilaud furnace, in the gulch below Maiu strect, was started up on Tuesday, and in thirty-six hours ten tons of lead bullion were smelted out and run into bars. The ore heing reduced is from the Imperial, Miser's Dream and Blue Cloud, which yields about fifty per cent. in bullion —composed of silver, lead and copper. The bullion will yield $100 per ton in silver. This and several other furnaces have now stopped on account of the burning out of the lining. They will soon start up again, The Wiland will have two to run alternately....The Swansea mill is again at work on Original Hidden Treasure ore.

ITEMS.—*News*: Eberhardt shows immense fields of ore in every direction in the Keystone....Original Hidden Treasure looks hetter than ever....Odin is a promising mine—has a shaft 45 feet down, and ore which will work $70 per tou.....Joe Potts has sent 15 tous to mill....Stockholm has three shafts 125 feet apart. The ore will yield, at the furnace, about $70 to the ton. ....West California proposes to go down with the main shaft to the ledge....Work on Borealis resumed hy contract to Capt. Mallett, at $16 per foot....Flora is heing opened up for work.

ITEMS—*Empire:* Origiual Hidden Treasure has 9,000 tons of ore out, which will mill $25 to $30 per ton....Aurora Consolidated ships twenty tons to mill daily, has 2,000 tons on hand, and never looked so well as now....South Aurora yields thirty to forty tons daily of as good ore as any yet shipped....Consolidated Chloride Flat has shut down, although it had ore enough out to last all winter....Bullion struck rich ore on Friday at the depth of eighty feet.

Oregon.

RYE VALLEY.—A La Grande paper says the late quartz discoveries iu Rye Valley are creating excitemont—several ledges having been found that prospect well. The one known as the Monumental ledge assays fabulously. Some of the ore is puro —and a printed receipt from an assay office in Boise City shows $9,091 to the ten.

New Mexico.

MINING ITEMS.—Elizabethtowu *Telegraph*, Dec. 11th: The greater portion of Dimmick & Co's mill has reached its destination on Ohio gulch. Thirty men are employed in mill and mine....Crawford & McCallum have again commenced work on the Gladstono silver lode near Scratch gulch en Quartz hill....The Benjamiu lode is turning out hetter and better.... The discovery of a new lode, with a 3-foot crevice, in the Last Chance region, is reported.

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the MINING AND SCIENTIFIC PRESS and other Journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT, AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE
Bromide Tunnel, White Pine, Nov. 5, 25c.	Dec. 9	Dec. 28
Crown Point Storey co., Nov 5, $7.50.	Dec. 9	Oct. 28
Chicago and Detroit Cons, July 16, 50c.	Dec. 4	Dec. 27*
Cherokee Flat, S. G., Kutie co. Nov. 6 25.	Dec. 10	Dec. 28
Cons. Virginia, Storey co., Nov. 3, $1 50.	Dec. 8	Dec. 31
Cons. Chloride Flat, W. P., Dec 14, $1.	Jan. 29	Feb. 24
Daney, Lyon co., Nev., Dec. 7, $1.	Jan 9	Jan. 27
Flowery, Storey co., Nov. 12, $1.	Dec 16	Jan. 7
Glenwood, El Dorado co., Dec. 13, 20c.	Jan. 10	Feb. 1
Gold Hill Tunnel, Dec. 17, $1.50.	Jan. 19	Feb. 5
Hope Gravel, Nevada co., Dec. 30, $1.	Jan. 17	Feb. 7
Imperial, Storey co., Nov. 15, $10.	Dec. 20	Jan 14
Klucaid Flat, Tuolumne co., Dec. 9, $2.50.	Jan. 12	Jan. 29*
La Blanca, Mexico, Nov. 5, $1.	Dec. 1	Dec. 27*
Latawana, W. P., Nov. 22, 10c.	Jan. 29	Feb. 19
Manchester, Alpine co., July 16, 10c.	Dec. 4	Dec. 27*
Mammoth, White Pine, Oct. 28, 20c.	Dec. 7	Dec. 28
Mahogany & G. H., W. P., Nov. 8, 10c.	Dec. 14	Jan. 4
Meadow Valley, Lincoln co., Dec. 4, 25c.	Jan. 5	Jan 25
Mineral City, W. P., Nov. 3, $1.50.	Dec. 6	Jan. 5
North Bloomfield, Nev. co., Nov. 6, $5.	Dec. 10	Dec. 28
Noonday, W. P., Nov. 13, 30*.	Dec. 20	Jan. 15
Ophir, Storey co., Oct 29, $2.	O c. 2	Dec. 24
Oneida, Amador co., Oct. 5, $10.	Nov. 29	Dec. 30
Pilot, W. P., Nov. 23, 10c.	Jan. 3	Jan. 18*
Pocahontas, El Dorado co., Nov 12, $5.	Dec. 20	Jan 12.*
Rising Star, Idaho, Nov. 5, 50c.	Dec. 18	Jan. 15
Rocky Bar, Nev. co., Nov. 23, $300.	Dec. 27	Jan. 13
Silver Star, White Pine, Nov 2, 15c.	Dec. 17	Jan. 3*
Silver Vault, W. P., Nov. 24, 5c.	Dec. 28	Jan. 24
Sacramento and Meredith, Nov. 15, $1.	Dec. 22	Jan 10
Sierra, Douglas co., Nev., Dec. 3, $1.25.	Jan. 6	Feb. 4
San Juanito Tun, Nov. 10, 25c.	Dec. 15	Dec. 25
Talluiah, Nev., Nov. 22, 32	Dec. 31	Jan. 25
Taylor, El Dorado co., Nov. 16, 30c.	Dec. 20	Jan 10.*
White Pine Mutual, Sept. 29, 50c.	Nov. 22	Jan. 20
Yellow Jacket, Storey co., Nov. 26, $5.	Dec. 28	Jan. 31
Yosemite, Humboldt co., Dec. $1.50, 50c.	Jan. 19	Feb. 5*

MEETINGS TO BE HELD.

Adriatic, Storey co.	Annual Meeting Jan. 3
Consolidated Virginia	Meeting Jan. 6
Gould & Curry	Annual Meeting Dec. 27
Miser's Dream	Meeting Jan. 4

LATEST DIVIDENDS—(Within Three Months).

Amador Co., div. $6 per share	Payable Nov. 8, 1869
Chollar-Potosi, div., $1	Payable Dec. 6, 1869
Eureka, div. $7 50	Payable Dec. 6, 1869
Golden Rule, Tuolumne co, div. 50c per sh	Pay. Oct. 26, 1869
Ida Elmore, div. $1	Payable Dec. 15, 1869
Kentuck, div., $10 per share	Payable Dec. 6, 1869
Sierra Nev., Storey co., Nev., div. 50c	Pay. Oct. 10, 1869

*Advertised in this journal.

Latest Mining Stock Prices Bid and Asked.

AT THE S. F. STOCK AND EXCHANGE BOARD

FRIDAY, December 24, 1869.

WASHOE DISTRICT, NEV.	Bid.	Asked.
Alpha	18	19¼
Belcher	15¾	—
Bullion, G. H.	16	16½
Crown Point	18¾	19
Cole (Va.)	—	—
Confidence	—	15
Chollar-Potosi	18¼	18⅝
Caney	—	½
Exchequer	—	8
Empire M. & M.	53	—
Gould & Curry	72	72¼
Gold Hill Quartz	—	30
Hale & Norcross	149	150
Imperial	59	61
Julia	—	½
Justice and Independent	—	2½
Kentuck	142	—
Lady Bryan	6¾	7
American	—	—
Occidental	12	12⅝
Ophir	14¾	14¾
Overman	80	80¾
Segregated Belcher	81	82½
Savage	45¾	45¾
Sierra Nevada	9¼	9½
Yellow Jacket	44½	44¾
MISCELLANEOUS DISTRICTS.		
Amador (California)	300	—
Aurora, White Pine	8	10
Eureka, (California)	780	—
Golden Chariot (Idaho)	10	15

San Francisco Prices of Copper Ores.

SAN FRANCISCO, Dec. 24, 1869.

W. T. Atwood states the following as approximate price at which copper ores can now he sold in this city. There is no sale for ores which assay less than 12 per cent.:

	Per ton.		Per ton
12 per cent. ore	$24 00	18 per cent. ore	$41 40
13 " "	26 65	19 " "	44 65
14 " "	29 40	20 " "	48 00
15 " "	32 25	25 " "	62 50
16 " "	25 20	30 " "	75 00
17 " "	38 25		

Ores assaying above 30 per cent., $2.50 per uuit. Bars at the rate of 13c. per lb. for pure copper.

LOSS OF WEIGHT BY PERSPIRATION.—The loss of weight experienced by a rower, through perspiration in a prolonged contest like that of the Harvards with the Oxfords is from four to eight pounds.

San Francisco Mining Stock Market.

City Stocks.

The sales of miscellaneous securities in the Stock Board during the past week have been as follows: 15 shares Spring Valley Water at $61 75; 20 shares San Francisco Gas at $87 75, and 1 share California Steam Navigation Company at 47½ per cent.

The returns of our local insurance companies to the Internal Revenue Department for the month of November, and previously this year, have been as follows, upon a currency basis of 74 cents on the dollar for the month of January, 77½ cents for February and March, 75½ cents for April, 73½ cents for May, 74½ cents for June and July, 74 cents for August, 74½ cents for September, 75½ cents for October, and 77½ cents for November.

	November.	Previously this year.	Total.
Pacific	$104,136	$1,093,555	$1,197,691
Union	40,609	402,657	443,266
Fireman's Fund	32,325	342,336	374,661
California	8,172	106,725	114,897
Merchants' Mutual Marine	31,243	257,873	289,116
Occidental	25,881	232,864	258,745
Home Mutual	15,328	146,851	162,179
Peoples'	22,314	183,039	205,353
Oriental	8,038	18,926	26,964
Total	$288,856	$2,794,826	$3,083,682
Same time in 1868	262,635	1,884,625	2,147,260
Increase in 1869	$26,221	$910,201	$936,422

The above statement shows an increase of $7,806 over the receipts in October. The receipts of the several companies in November as compared with October show the following difference:

	Increase.	Decrease.
Pacific	$3,085	.....
Union	8,952	.....
Fireman's Fund	.....	$3,654
California	.....	2,085
Merchants' Mutual Marine	.....	3,628
Occidental	3,591	.....
Home Mutual	.....	193
People's	2,192	.....
Oriental	1,006	.....

The receipts of the city railroads for the month of November and previously this year were as follows:

	November.	Previously this year.	Total.
Omnibus	$20,319	$246,378	$266,697
North Beach & Mission	21,168	245,357	266,525
Central	15,898	173,440	189,338
Front Street, Mission & Ocean	7,896	93,534	101,440
Market Street	9,439	117,404	126,843
Potrero and Bay View	2,356	30,549	32,905
City	5,259	18,865	24,124
Totals	$82,345	$925,527	$1,007,872
Same time in 1868	90,015	835,018	925,033
Increase in 1869		$90,509	$82,839
Decrease in 1869	$7,670	.....	.....

As compared with the total receipts in October, we find a decrease of $17,859. The receipts of November as against October show the following difference:

	Increase.	Decrease.
Omnibus	.....	$3,964
North Beach and Mission	.....	5,249
Central	.....	3,572
Front Street, Mission and Ocean	.....	1,721
Market Street	.....	2,151
Potrero and Bay View	.....	388
City	.....	504

Mining Share Market.

The market for mining stocks has been less active than the previous week, most stocks showing a recession in price. Information from the various mining localities is quite meagre, and this, together with the intervention of the holiday season of the year, has contributed greatly to the prevailing inactivity.

We have further information with regard to the stoppage of various White Pine mines, hut cannot agree with those who call it a hearing moving. If a sufficiency of ore is on hand to run the mills during the winter, as some are reported to have, where is the need to continue the heavy expeuse when it hears so hard at the present time? The true policy, certainly, is to avoid all unnecessary outlays when times are extremely pressiug, and this appears to he the condition which affairs have assumed in the White Pine region. The expenses are entirely too heavy, and some plan will no doubt he devised to hetter the mining interests there so soon as the winter is over. The White Pine *News* is of the opinion "that the mills, under a combination of mill, mine, and water interests, will generally he removed up to the hillside early in the Spring—to save hauling. In that case, local railroads will strap the slopes thick, and hauling will dwindle to a small interest."

GOULD & CURRY—exhibited a little more activity and was well maintained. The ore extracted during the week ending Decemher 20th amounted to 429 tons; previous week, 416 tons. We have nothing of interest as regards the upper chambers of this mine. The product so far has held out quite well. They resumed work at the seventh station at noon on the 20th inst. The hullion received to date for account of December aggregates $10,228.

CHOLLAR-POTOSI—was in the market to a very large extent, at a decline from prices obtained the previous week. For the week closing with the 17th inst., 1,029 tons of ore were extracted, against 997 tons the previous week. The change in the appearance of the stopes is not very great, and, upon the whole, look as well as they did last week. The work of clearing the Chollar-Potosi shaft has been vigorously prosecuted, and on the 21st they were nearly at the bottom of it.

HALE & NORCROSS—sold to a less extent than the previous week, though the stock rose to $159 on the 20th, closing at a considerably less figure. During the week ending December 18th the upper mine yielded 127½ tons of ore and the lower 804¼—total, 931¾; previous week, 853 tons. Information to the 21st is to the effect that on the 20th the water broke in on the track floor of the sixth level, but was speedily mastered, leaving the level as clear of water as usual, and that the ore breasts on this level continue to look very fine. They will soon be able to run two cages from this level, which will greatly increase the quantity of ore hoisted from this locality of the mine.—OVERMAN has been in comparatively light request, at a slight recession. For the week ending December 18th, 531 tons of ore were extracted, valued at $7,492 33—equal to $14 10 per ton. The bullion returns for November are given at $55,691.

A LIVERPOOL circular makes an appeal in favor of Crlifornia milk-wecd as a valuable addition to fibrous material, now so much in demand, and thinks it can be made a valuahle article of commerce.

Dew and Frost.

Every one has noticed how moisture collects on a pitcher of ice water on a hot day. The reason of this depositien is that the air in immediate contact with the cold pitcher becomes cooled to such a degree that it can no longer hold all the moisture it contains, and so the excess is deposited on the pitcher's surface; for it is well known that warm air can hold mere water than cold.

New just in the same way after sunset the earth ceols the air in centact with it, and this depesits seme of its water in the form of dew. This is plain enough. But some may not see the reasen why the earth becemes cool so suddenly after the setting of the sun. Se it may be interesting to pursue our inquiries a little further.

The earth, science informs us, is moving through a spaee whose temperature is at least 270° below zero (Fah.), and is contiuually losing heat by radiation. The enveloping atmosphere, like a blanket, protects it from the cold to a certain extent; bnt still the loss of heat is so great that, were the sun's rays withheld a few days, the tropics even would get as cold as are the poles in wiuter. Now in the daytime the earth receives from the sun more heat than it loses, but when the sun goes dewn, the loss of heat still ceutinuiug, the surface soons get cold and the dew falls; or, if the temperature gets below the freezing point, the dew is changed te frost.

The greatest depesition of dew occurs on clear nights, and in cloudy weather none is deposited. This is hecause the clouds reflect hack the rays of heat which the earth radiates forth. By spreading a piece of glass or auy covering over the ground we canin the same way reflect back the heat and protect tender plants.

More dew is deposited on grass and foliage—which, by the way, need this refreshing moisture—than on fallew land or on sand or rocks. It is easy to see that the most dew will fall on the coelest surfacc, and experiments show that the surfaces of leaves have a much greater radiating power than the rocks, for instance, and hence coel more rapidly.

There is ene more point which we may notice in this connection. When a liquid is converted into a gas it absorbs heat; when the gas is condensed hack again into a liquid, heat is given out. Now the sun expends some of its warmth in evaporating water, and this heat is not lost, but is given to the earth when the vapors condense and dew (er rain) fall.

How Stone Should be Laid.

[Written for the Mining and Scientific Press.]

All stone should he so quarried aud dressed that each block may lie in the wall in the same relative pesition that it held in the earth; that is, the side which was uppermest hefore quarrying should he also uppermost in the structure. Oue reason is, that the particles of the stone, as they crystallized from a liquid or a fused state, becamc so superposed that the general liue of pressure was iu the direction of gravity; so that if the stone is inverted or placed upon cdge, its particles begin to work upon each other in a different direction from the original one, and the consequence is, the stone crumbles or splits, and tho huilding is very likely ruined. This arrangement of the particles may be exemplified by a stone or brick arch: the hlocks rest one upon another, and all are held in position and tightened hy the wedge-shaped keystone; but turn the arch upside down, or on one side, and it no longer supports itself. Every good engineer and stone mason knows this fact and the importance of oheying this law of nature, hut many of your readers who pretend to be neither, may find this useful when laying stone for themselves, or in overseeing such work.

E. R. H.

Farming and Gardening.

Communications for this department are solicited from all parts of the Pacific States and Territories.

California a Wonderful Country.

The prolific climate of California is hardly yet understood, even by our own people, while it is still less known abroad. As an evidence of what *can* he done here, we would call attention to the following fact noted hy the Tulare *Times:* "Mr. J. B. Franz raised a fine crop of wheat on his place this year, and after taking it off, plowed the same ground, and is now eelling corn and tnrnips raised as a second crop. He has also a eecond crop of volunteer grain that is now getting ripe. We have in our possession a turnip, which was raised on thie farm, that measures twenty-eight inches in circumference."

In many parts of California continuous crops may he raised the year round, by careful culture and irrigation. The Chinese, and some others who carry on gardening in and about this city, fully under stand this fact. Within sight of onr residence, at the south end, is a large garden which has heen nnder continnous cultivation, with green crops, every month in the year for the last *seven years*—the entire time we have resided there. It ie leased and cultivated by Chinese. As eoon ae one crop is taken off, the ground is thoroughly dressed with manure, and another is put in. It is so managed that ripe crops are dsily coming in, and new ones being planted. Where else in this latitude can such a thing be eeen?

In this connection, we cannot refrain from quoting the following paragraph from the pen of an enthusiastic writer, who epeaks of California as a land "where the plums are without curculios, the wheat fields without weavil, the farms without need of barns, and the cocooneries without fesr of storms; where the ox needs no fodder, the ass no crib, the calf no etall, the lamh no shepherd's care; where the hees yield more honey, the worm more eilk, the kine more muscle, the sheep more wool, the vineyard more wino, and the fields more grain than anywhere else; where the olive and the apple grow side hy side, and the fig tree and the pear intertwine each other's branches, and the rose opens its petals both with the earliest tulip and the latest dahlia; where Christmas is as fragrant as May day, and annnale become perennials, and perennials evergreens; where exotics become naturalized, and the winter wheat of one year becomes the epring wheat of next; and trees which, had they grown on Mount Olivet, might have witnessed the Savior's agony, and accompanied him in his ascension three hundred feet in the fields of light, etill flourish; where the rocks are rich in treasure, and the streams roll down golden sand; where nature moves even volcanic forces in most poetic moods, and molds caves and chasms, and bridges and cataracts into forms eo suhlime and pictnresque as to even make the atheist pray, and the mathematician tune the lyre; where the refreshing night of the temperate zone, married to the luxurions deep of the tropics, makes the outgoings of the morning and evening to rejoice; where dimes are despised and coppers unknown; where greenbacks are eold hy the package, and rich men are democratic and poor men aristocratic; where, withal, prosperity ie protected, intelligence diffused, and Christianity adopted."

The above, extravagant ae it may seem to one not acquainted with our climate and soil, is true to the very word and letter, and yet the half has not been told.

Stall Floors.—A stall floor should have hut very little inclination, just sufficient to allow the urine to flow slowly away; better that absorbents should be used for taking it up. Animals suffer much by standing on a floor eloping back. Let a pereon stand for a fow moments with his toee higher than his heels, and he will fully realize thie fact. Animals endeavor to relieve themselves of this unnatural poeition by standing crossways of their stalls, and hy hacking as far as possible, hoping to find a level in that direction.

Improving Our Native Chestnuts.

Much interest has been excited in this State, within the past two or three yeare, in regard to the oultivation of the chestnnt. The excitement was started here hy the exhibition of eome very large nuts of this kind from Japan, aud during the past season a large invoice of Japanese chestnut trees was received in this city, and forwarded to the vineyard of Mr. Buckhee, ahove Coloma, from whence many of our ranchmen have been supplied.

The appearanoe here of these nuts and trees has led to a discuesion of the relative valne hetween our native chestnut and the foreign vsriety. It is conceded on all eides that the European chestnut ie quite inferior in *quality* to our native varieties, although it hae much the advantage in *size;* and henoe it ie inferred that we should he oautious ahout introducing.here the mammoth Japaneee varieties, the quality of which has not yet been fairly placed in comparison with our own. It is olaimed that hy a little care in making selections, we shonld he ahle to produce from onr native varietiee, nuts, almost, if not qnite, equal in size to either the Enropean or Japanese, and much euperior in quality.

Every one who has ever taken the trouhle to examine the nuts of different trees in the same forest, must have noticed the great differenoe in form, color, and size; and ss these charaoteristics oan he readily perpetuated hy the usual method of hudding and grafting, there is no good reason why we should not have permanent varieties of the native chestnut, as well as of apples and pears. Of course seedlings should he grown from the very largest nuts to he found, and then again selected from these in the same way when they come into hearing.

About tweuty-five years ago, a gentleman in Washington, D. C,, sent Mr. Charles Downing a few specimene of very large native chestnuts, a few of which he planted; and a tree grown from one of these nuts is now standing upon the lawn of the Downing place at Newburgh. This tree has frnited for several yeare past, and produces nuts, which are very large and fine, ehowing that they have not degenerated, hut are equal, if not superior, to the original.

There seems to he, just now, a plentiful supply of Eastern nut seeds, with which our ranchmen can snpply themselves. Mr. J. A. Kent, of Greenville, Mercer county, Penn., has recently arrived at Sacramento with 5,000 pounds of fresh chestnuts, gathered expressly for seed, and with the idea of introducing them into the nurseries of California.

The *Union* of Grass Valley, saye that A. D. Tnttle, who recently returned from a visit to the East, brought with him a large supply of oheetnuts, hickory nuts, walnuts, and other eeeds of trees, which he is distrihuting gratuitously to all who wieh to plant them.

As an evidence that onr people are moving in the matter of forest tree planting, we eee in onr exchanges frequent notices like the following, which we clip from the Oakland *News:* "James Stratton, Esq., has just pnrchased some fresh chestnuts from the States, and English walnuts from Los Angeles conuty, which he intends to plant on his land at Berkeley. This is an action which we can readily recommend othere to imitate. He that grows a tree is a friend to posterity, and in the act he beautifiee and adds value to his own property."

The Grase Valley *Union* offers the following as a "free suggestion in this direction:" "The railroad acroee the continent being finished, it is easy now for our farmers to get tree seeds from the East. We suggest that the chesnut and chinquagin will grow in theee foot-hills with great rapidity, will hear a most profitahle crop of nuts, and will fnrnish the most durahle timber for fencing or for building purposes. It is just now the time for planting. We have all done too much talking about the capabilities of our foot-hills, and have tried too few experiments in nut-bearing trees especially."

There ie good reason for believing that in a few years California will have all the treos growing upou her soil which are of use for nut-hearing and for mechanical and fencing purposes. Those who do not embrace the present opportunity to properly stock their ranches with forest trees, will soon find them unsaleable and unprofitahle hy reason of the superior advantages presented hy the ranches of their neighbors, who early heeded the advice to *plant trees.*

Phenomena of Plant Growth.

It is interesting to uotice, and important to study, the various modifications induced in the habits and growth of plants, hy changes of climate, and careful or modified culture. Such modificatious often culminate in the production of permaneut varieties.

A cultivator of melons in Alabama has been experimenting with his vines, uutil he is now rejoicing in his ability to produce two orops in one season from the ssme vines. He cuts his vines back quite severely, after the first crop has been gathered, when, from the old stumps, *new vines* are started, from which ho gathers a *second* crop.

This, of course, can be done only whero no frost interferes between the first and second crops. Snch results are not new to florists. In countries where no frost interferes with the labors of the cultivator, all the members of tho melon and squash family, as well as many other anuual plants, may, with proper care and culture, he made perennial. This, in some cases, would probahly have to be doue at the expense of maturing the seed.

In California, such things are quite commou, even in the uatural growth of plants. Here the castor bean, an annual elsewhere, becomes naturally a perennial, and will grow to the size of a tree, twelve or fifteen feet in height, with a trunk six or eight inches in diameter. Several of the annual flowering plants become perennial here. Among others, we may mention the common "Four O'clock," which is said also to form here a bulbous root.

One of our exchanges, during the past week, referred to an instance of this kind, now to he seen in Santa Clara county, as follows: "Two miles west of Gilroy, among the foothills of the Coast Range, B. C. Bahb planted, four years ago, two hills of Lima heans on the eouth side of his house, and trained the vines over the door for ornament. Those same viues have grown on and continued to hlossom and produce seed every successive seasou eince. The trunk steme for some distance from the ground have hardened to the consistency of wood, and the process of lignification is apparently extending upward through the whole vine."

Fruit Crop of 1870 to be Small.—A correspondent of the Boston *Journal of Chemistry* expresses the opinion, pronounced reasonable by that journal, that the next crop of fruit in New Eogland will he small, for, owing to the great gale of Sept. 8th, the trees have bloomed out of season. The fruit buds of deciduoue trees, as well as the leaf buds, are *formed* in August and *matured* in September, and although their covering is sufficient to withstand the winter'e cold and storms, the powerful wrenching received before they were ripe may have broken the envelope, so that these buds also were forced into premature development by the active circulation.

Painting Rats.—A Connecticut man saye his way of driving rats from his premisee is to catch one, dip it in red paint, except the head, and let it go again. He finds this plan effectual.

Apples in San Diego.

The people of San Diego are discuseing the feasihility of raising their own apples, iustead of ohtaining them, as they now do, from this portion of the State. Recent experiments have ehown that the apple hae a much wider range than has generally heen eupposed, aud we have little doubt that certsin varieties might thrive as far south on the Pacific coast as the territory of this State extends.

A correspondent of the San Diego *Union* says that only two experiments have heen made with the oultivation of the apple in that county—one by Capt. Wilcox, and the other by himself. Iu speaking of his own trees, which we judge were set out last fall, he says the growth has been good. He very properly advises careful setting and cultivation; allowing the branches to start low. The latter precaution will he especially necessary to prevent the heat of the sun from injuring the trunk. The experimentor should not he eatisfied with partial success, but strive to do hetter; neither should he he discouraged hy a single nor many failures. Care should be taken in the selection of the troes, and different varieties should he tried, to ascertain those best suited to the climate.

The *Red Astracan* is found to do exceedingly well in the eouthern Atlantic States, and would probahly do as well as any in the southern part of this State. The success of the recent experiments in the Statee bordering on the Gulf of Mexico, is quite sufficient to warrant careful trials in San Diego and Los Angeles counties. Summer or early varieties will probahly succeed best. Our friends in that latitude can hardly hope to sucoeed in raising apples that will keep far into the winter.

Testing Seeds.

It is often of much importance that the farmer should know, quite accurately, what proportion of the eeed which he is ahout to plant will germinate; or to teet, in eome convenient and ready manner, the extent to which seeds have deteriorated hy age, or been adulterated hy fraud. The Royal Horticultural Society of London recently appointed a committee to investigate this suhject, which committee has reported that they "have under consideration the various modes of testing eeeds which are known to them; and that they feel iuclined to recommend as, on the whole, the easiest, oleanest and least troublesome, the placing of the seeds hetween moist flannel, and keeping them in the temperature of a kitohen or eitting room for a few days." This, of couree, is not equal to Nature's own test—actual growth in the earth; hut it answers properly for most kinds of seeds; and any eced that gives a good return uuder it may be depended on as certain not to give a worse result when placed in the ground. An idea of its efficiency may he inferred from a trial made by one of the committee upon 100 seeds, whoso average of good seeds had, in previous trials, heen found to he 75. The above method gave 25 seeds germinating on the third day; 23 on the fourth; 16 on the fifth; 9 on the sixth; and 3 on the seve nth—76 in all.

The Way to Farm.—If a man wants to succeed in his husinese he mnst have faith iu it as a business that will enstain him, and provide for his old age, and afford a comfortable support for his family. That is what we want to see among farmere. When the man who drives down the etake feels that it is driven for life, when he feels that every tree he plants ie to he a strong bond to bind him to that epot for life, he will thrive hy farming; and when farmers do this they will show to the world that they have faith in their business, and they will be ready to make investments in their bnsiness.

Grinding Hay for Feed.

Grinding hay for cattle feed was first introduced by Mr. Ross Winans of Baltimore—tho man who first built cigar steamers, coal-burning locomotives, and railroad batteries, and who has more recently distiuguished himself hy huilding gigantic railroads for the Emperor of Russia. He once essayed to foed a herd of eows; bnt even in such a commonplaco operation as that, his originality of thought eropped out in tho usual extraordinary manner which attends all his undertakings. In thinking over tho matter of his new husiness, he arrived at the conclusion that stall feeding was hetter than field grazing. The following was

His Argument for the Theory.

"In pasturage, a vast amount of herbage is trodden upon or polluted; this is one sourco of loss. At some seasons of the year tho grass is rank and full of moisturo; at once unhealthy for the cow; and not economical for consnmption, since it is prevented from ever reaching a much more valuable stago of growth. The stock, moreover, must travel over a greater or less area to gather their food for themselves; they are exposed to burning suu and driving storms; they often eat the grass soaked by rain or dews, and unfit to afford the fullest amount of nutriment. I can cut my grass cheaper hy machines with horse power, than to use the teeth of my cattle for the purpose. I can cut it *all;* there will he none crushed ont or defiled. I can select just that condition for cntting; in wbich the fullest amount of nntriment will be contained in the stalks and leaves, after the first succulence of spring is past, and before the juices have gone forward to ripen the seed."

Having thus settlod the point in favor of stall feeding, and accepting the eondition of feeding hay chiefly, be next concluded tbat it it was cheaper and better to masticate the hay by machinory ,than compel the cows to continue on in the old way of the muscular and molar process. Upon tbis he argues as follcws:

"Cutting did not seem fully to meet the exigencies of the case; the important matter being to disintegrate the fodder hy brnising, breaking, crushing, tearing, etc., and not by simply dividing it into shorter lengths. Indeed, when coarse hay is simply cut, he doubted whether the animal could masticate it to the same advantage as when uncut; as it would then slip around in the month instead of being held and crushed by the teeth. He wanted to do for his hay just what the English and Scotch do in feeding oats—crush it so as to be thoroughly accessable to the moisture evolved in mastication or to the water used in mixing it witb other food."

This course of reasoning soon led Mr. Winans to the

Invention of the Hay Grinder,

By which he was enabled to so "masticate" his hay as to bring it into a condition mnch resembling ground oats, in wbich form it might be mixed witb ground grain, or fed separately, as was found desirable. We have no description of tho apparatus employed for that purpose; but we have tbe statement that tho operation of grinding was effected at a cost of about ono dollar a ton; steam being used for power. Tbere are now, we believe, quite a number of parties in the Middle States, and perbaps elsewhere, who are feeding ground hay; among others, Mr Joseph S. Kirk, of Pittsburg, Pa., who speaks bighly of his experience in its use.

The ground bay was fed to tho cows in two different ways. About one and a half busbels per day per cow was wet with water or distiller's slop, and mixed with six quarts of corn meal. Tbis quantity was divided into tbree feeds. Then, in a separate compartment of the feeding trough, dry gronnd hay was given to tbe full extent tbat each cow would eat, which probably averaged about one hushel per day. Its weigbt was about eight pounds per bushel when of best quality.

The Result of the Experiment,

As reported at the time, fully realized his most sanguine anticipations, and the ecocomy and practicability of the same was thoroughly tested by tho fact that ou the first year, from 700 acres of mowing land, 300 cattle and 30 horses were kept tho year through, with 320 tons of hay to spare at the end of the year. The milking cows, over 200 in number, averaged for tho year two and one-tenth gallons of milk each per day.

Preserving Apples, Pears, Etc.

Next in importance to growing our hardy fruits may ho ranked the preservation of them for winter use, whether by amateurs or professional gardeners. In tho month of February last, a few prizos offered at one of tho Tuesday meetings at South Kensington brought together a considerable quantity of apples and pears from various exhibitors; and this fruit was in so excellent a state of preservation, that the mode of keeping iu the different cases were inquired into. The following is a *precis*, published by the Royal Horticultural Society, of the communications received:

1. As tho flavor of fruit is so easily affected by heterogeneous odors, it is highly desirablo that the apple and pear room shonld be distinct.

2. The walls and the floor should be annually washed with a solution of quicklime, to which common salt is sometimes added. [Salt is objectionahle.]

3. The room should be perfectly dry, kept at as uniform a temperatnre as practicable, and be well ventilated; but there should not he a thorough draft.

4. The utmost caro should be takeu in gathering the frnit, whicb should be handled as little as possible.

2. For present use, the fruit should be well ripened; hut if for long keeping, it is better, especially with pears, that it should not have arrived at complete maturity. This poiut, however, requires considerable judgment.

6. No imperfect fruit should be stored with tbat which is sound, and every more or less decayed specimen should be immediately removed.

7. If placed on shelves, the fruit should not lie more than two deep; and no straw should be used.

8. Where especially clear and beautiful specimens are wanted, they may be packed carefully in *dry* bran, or in layers of *perfectly dry* cotton-wool, either in closed boxes or large garden-pots. Scentless sawdust will answer the same purpose; but pine saw-dust is apt to communicate an unpleasant taste.

9. With care, early apples may be kept till Christmas; while many kinds may be preserved in perfection a second year.—*Florist and Pomologist.*

First Flour Mill in San Diego.—Mr. I. Lankershim & Co., of this city, have just erected a first-class flour mill at San Diego. The mill has three run of stoues, yet its appointments embody all the latest improvements known. Heretofore, there has not been wheat enough raised in that part of the State to stock a mill; yet the success whicb last year attended Mr. Lankershim's farming was sufficiently encouraging to induce him to erect the mill. He has now 6,000 sacks of wheat in the mill, and will be able to secure sufficieut to supply that entire section with flour, for which article it has heretofore depended on San Francisco. We rejoice at these evidences of prosperity and progress manifested in the numerous distant sections of the State.

Contrivance Better than Hand Work. A regnlar Yank in Lisbon, Connecticut, who wanted to put a water pipe through a drain several feet below the surface without digging up the drain, a few days since, tied a string to a cat's leg, thrust pussy into one end of the drain, and giving one terrific "scat!" the feline quickly appeared at the otber end. Detaching tho string from tbe cat's leg, be made the other end fast to the pipe, and then drew it through.

Grain in San Diego County.—Corn, wheat and barley have done unusually well the past season in San Diego county. The Cajon Company, in Sweetwater Valley, raised 600 acres of wheat, averaging 50 busbels to tbe acre, and 200 acres of barley, averaging 55 bushels. Farmers are making calculations to go into wheat raising on a large scale next year.

Russian Apples.

It may not be generally known that some of our best varieties of apples originated in Russia. The Russiau apples appear to be especially suited to the colder portions of tho Eastern and Western States, where many other varieties prove altogether too tender for successful cultivatiou.

Among the better known apples of Russia now cultivated in America, we may meution the *Alexander*, well known for its size and beauty. The tree is vigorous, spreading in form, and reasonably productive. Tho *Red Astracan* is as well known as any of our native varieties, is cultivated in every Stato in the Union, and thrives everywhere. In extreme southern latitudes it seems to do best on a thorn stock. Has this stock been employed in this State? This apple is unsurpassed for beauty, and though not especially rich in flavor, it is a very desirable apple. It should he found in every gardeu. The *White Astracan* is neither as good nor as generally suited to varying climates. The *Rambour Papeleau* is a vigorous and productive tree, with large, rich, yellow fruit, spotted or splasbed with shades of red. It is comparatively new, but a promising fruit, and a good keeper. The *Borowtsky*, also a Russian apple, is hut little known in this country; so also are the *Charlowoski* and the *Tetofsky*, both very handsome apples, of palo yellow color, striped with red on the sunny side.

Tilton's Journal, from which we condense the above, says that most of tho Russian apples differ from the American in their waxen bloom and largo foliage. Tbey usually ripen early, as tbey must do to come to maturity in the short snmmers of their native region. The *Journal* suggests the policy of producing new varieties from the seeds of the Russian apples, either by natural variation, or by hybridizing among themselves or with othor hardy kinds. It thinks that equally hardy and possibly improved quality and better keeping varieties may he thus produced. No better country than California could be found for such experiments.

Beet Sugar.—A gentleman in Wisconsin writes to a resident here, tbat he was "talked into sugar beets," two years ago, by two Germans. He sends samples of bis sugar made in twenty-four hours from beets. No. 1, very light yellow; No. 2. whitish; No. 3, very white, but not loaf sugar. It is very beautiful. He wants to know about our country (California) for beets. He says: "Beet sugar comes nearor to bullion thau anything I ever touched." He says ho raises ten tons to the acre; each beet weighing from one to five pounds, and yielding eight per ceut. of sugar, or 1,600 pounds of sugar per acre. Refuse pulp sells at five dollars per ton; beets cost four dollars and fifty cents per ton at the mill.

The Sacramento Valley Beet Sugar Company are now testiug beets raised on their farm, located on the east hank of the American river, a few miles from this city. They have already extracted good crystallized sugar, and are now engaged in testing the amount of sugar that can bo taken from a ton of beets.—*Sacramento Bee.*

Steaming Food for Stock.—One who has ample experience in steaming food for stock says that the advantages are: 1. It renders moldy hay, straw, etc., palatahle and satisfactory to the animals. 2. It enables the feeder to mix different qualities of food, hay and straw, good and poor hay, etc., rendering it all palatable, softening the hard, tough fihres, and thus enabling the farmer to save all. 3. It improves the manure, rendering all ready for use. 4. It will cure incipient heaves in horses, and has a remarkable effect upon horses with a sudden cold and in constipation, and keeps all animals more healthy. 5. It improves the appearance of all animals at once, and fattens them in much less time. 6. It saves at least one-third of the food—two bushels of cooked hay will satisfy cows as well as three bushels of uncooked.

In Omaha wheat is selling at 40 cents, corn and oats 35,—a pretty rougb state of affairs for farmers in tbose localites.

San Francisco Market Rates.

Wholesale Prices.

Friday, December 24, 1869.

Flour, Extra, ₱ bbl	$5 00	@$5 50
Do. Superfine	4 25	@ 4 50
Corn Meal, ₱ 100 lbs	2 00	@ 2 25
Wheat, ₱ 100 lbs	1 15	@ 1 65
Oats, ₱ 100 lbs	1 15	@ 1 80
Barley, ₱ 100 lbs	1 00	@ 1 25
Beans, ₱ 100 lbs	2 50	@ 3 50
Potatoes, ₱ 100 lbs	75	@ 1 00
Hay, ₱ ton	10 00	@18 00
Live Oak Wood, ₱ cord	9 00	@14 00
Beef, extra, dressed, ₱ lb	7	@ 10
Sheep, on foot	2 50	@ 3 00
Hogs, on foot, ₱ lb	5	@ 5½
Hogs, dressed, ₱ lb	8	@ 9

GROCERIES, ETC.

Sugar, crushed, ₱ lb	—	@ 15
Do. China	10	@ 11
Coffee, Costa Rica, ₱ lb	18½	@ 19
Do. Rio	18½	@ 19
Tea, Japan, ₱ lb	75	@ 90
Do. Green	60	@ 1 25
Hawaiian Rice, ₱ lb	9½	@ 10
China Rice, ₱ lb	5½	@ 6
Coal Oil, ₱ gallon	62½	@ 65
Candles, ₱ lb	16	@ 18
Overland Butter	30	@ 42
Ranch Butter, ₱ lb	40	@ 50
Isthmus Butter, ₱ lb	25	@ 40
Cheese, California, ₱ lb	16	@ 20
Eggs, ₱ dozen	50	@ 55
Lard, ₱ lb	14	@ 15
Ham and Bacon, ₱ lb	17	@ 19
Shoulders, ₱ lb	10	@ 12

Retail Prices.

Butter, California, fresh, ₱ lb	50	@ 60
do. pickled, ₱ lb	40	@ 50
do. Oregon, ₱ lb	25	@ 30
do. New York, ₱ lb	40	@ 50
Cheese, ₱ lb	20	@ 25
Honey, ₱ lb	25	@ 50
Eggs, ₱ dozen	60	@ 65
Lard, ₱ lb	20	@ 22½
Hams and Bacon, ₱ lb	22	@ 25
Cranberries, ₱ gallon	1 00	@ 1 25
Potatoes, ₱ lb	2	@ 3
Potatoes, Sweet, ₱ lb	—	@ 2
Tomatoes, ₱ lb	2	@ 3
Onions, ₱ lb	3	@ 5
Apples, No. 1, ₱ lb	4	@ 5
Pears, Table, ₱ lb	5	@
Plums, dried, ₱ lb	10	@ 12
Peaches, dried, ₱ lb	10	@ 15
Oranges, ₱ dozen	50	@ 75
Lemons, ₱ dozen	—	@ 1 00
Chickens, apiece	75	@ 1 00
Turkeys, ₱ lb	—	@ 25
Soap, Pale and C. O		@ 12
Soap, Castile, ₱ lb		@ 20

Berryessa Valley.—Nearly the whole of the cultivated land in Berryessa valley has already been plowed and sowed this season. Not less than 30,000 acres are already in, which is somewhat in excess of the last sowing.

Sound.—Different sounds travel with different degrees of velocity. A call to dinner will run over a ten-acre lot in a minute and a half; while a summous to work will often take from five to ten minutes.

Frozen Apples.—Michigan lost a million dollars' worth of apples hy the cold snap of the first of November last. Immense quantities were also frozen in Vermout and other Northern States.

Cheap.—Wheat is now selling in Rogue River and Umpqua valleys, Oregon, for 37½ cents, and barley for 25 cents per bushel, and dull sales at that.

An Acid River.—Humboldt found that the waters of the Rio Vinaigre, in South America, which has its source on tho volcano Purace, coutain free sulphuric and muriatic acids. According to Boussingault, this river empties into the Rio Cauca, into which it falls from a height of about 400 feet, discharging daily 34,784 cubic metres of water, containing 37,611 kilogrammes (more than forty tons) of strong sulphuric acid and 31,654 kilogrammes (nearly thirty-five tons) of strong muriatic acid. No fish are found in the Rio Cauca for more than ten miles below the point where it receives these acid waters.

In the island of Java there are several small streams aud lakes which contain free sulphuric and muriatic acids; and ou the island of Sumatra there is a lake which contains free nitric acid. All these phenomena are the resnlt of volcanic action.

The New Gas.—The New York Oxygen Gas Company, incorporated for the manufacture of oxygen, for purposes of illumination, hy the *de*oxidizing and *re*oxidizing of the manganate of soda, bave works which cover eight lots of ground, and consist of extensive buildings of brick and corrugated iron, powerful blowing and compressing engines, an ample gas-holder, and a large French furnace, with twelve retorts, each large enough to contain 800 pounds of the manganate. These retorts are now producing oxygen at the rate of 25,000 cubic feet per day.—*Boston Journal of Chemistry.*

Combs made from Old Shoes.—Old worn leatber, cut up in small pieces, and allowed to remain for two days in chloride of sulphur, becomes very hard and brittle. Being then washed, dried, and ground, and mixed with glue or shellac, it may be shaped in monlds into combs, buttons, knife handles and other articles.

Mining and Scientific Press.

W. B. EWER.....Senior Editor.

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San Francisco:

Saturday Morning, Dec. 25, 1869

Subscription Price Reduced!—This is our last numher of Vol. XIX. Profited by the experience of the past, snd encouraged with liberal patronage, we shall add improvements which will render the next volume of the Press much superior to its former issnes. Its price is reduced to $4 a year. We solicit renewals from old patrons, and would thank them to inform their neighbors of onr change of rates, and solicit a trial of our paper. From manifestations already hefore us, we are confident of nearly doubling onr subscription list during the coming year.

A Bill to Protect Placer Claims has been introduced in Congress by the Hon. A. A. Sargent, of California. It amends the Act granting right of way to ditch and canal owners over puhlic lands, hy adding sections to the effect that placer claims shall he subject to entry and patent under like conditions as are provided for vein or lode claims; that where lands have been previonsly snrveyed hy the United States, no fnrther survey is necessary, and they may be paid for at the rate of $2.50 per acre; that legal suhdivisions of forty acres may be suhdivided into 10-acre tracts; that two or more persons or associations having contignons claims, may make joint entry thereof; that no plaoer claim shall exceed 160 aores for any one person or association; and that where any person has held and worked a claim for a period equal to the time prescribed hy the statute of limitations for mining claims, evidence of such work shall be sufficient to estahlish a right to a patent.

Woman Suffrage.—A call has heen issned hy the officers of several Woman Suffrage Associations for delegates—men and women—to attend a State Convention to he held in Dashaway Hall, San Francisco, on January 26th. The ohject is "to organize a California Woman Suffrage Association, and take such other action as may be deemed wise."

How a Rail is Made.

Rsilrosds sre destined to play such an impor ant part in the development of our Stste, that it may be of interest to our resders to know how an iron rail is msde. Let them go with us to the Potrero and visit the Pacific Rolling Mills—the only works of the kind npon this coast—which were erected in 1868, and have been running steadily since July of thst year. With a capitsl stock of $1,000,000, and an excellent manager, Mr. B. P. Brunner, the compsny hss been ahle to compete with Eastern mills in the manufactnre of railroad and merchant iron. Their enclosure of some 500 feet square contsins a large hnilding, 230 feet hy 130 feet, which is the mill proper, and seversl smaller huildings, used for a holt and nut factory, mschine and repair shops, a pattern shop, and the offices of the Company, besides a lsrge open space for stock and store yards, with a fine wharf npon two sides facing upon the Bay. To this plsce are hrought sll

The Raw Materials.

These are nnloaded from the vessels hy mesns of a donkey engine, and csrs, running upon a narrow tramway, convey them to their varions destinations. Pig-iron being very expensive at present, the chief article used is scrap iron, both cast snd wronght. These two sorts are separated by hand, the csst going to the puddling-furnace to be mixed with pig, while the wrought is made up into bundles ahout two feet long snd six inches square, which are carried to a heating-furnace within the mill. Old horseshoes, heing particularly tough, are reserved for msking an extra quality, called "chsrcoal iron;" they are bought at $34 per ton, common wrought scrap at only $16 to $20 per ton, and cast at ¾c. per ponnd. The coal, which should he free from sulphur, comes mostly from Sydney; the fire-brick and clay come from Liverpool and New York, and the lime and sand from this State. Large scrap iron, hefore heing bundled, has to be cut into small pieces hy means of large shears worked by steam power. These are in sheds adjoining the main huilding. Following the hundles of scrap into the mill, we see them snhjected to

The Heating and Hammering Processes.

The bnndles, weighing 150 pounds each, are "charged" into large reverheratory fnrnaces, hy means of a long-handled iron paddle, and the doors of the furnaces heing closed, the iron is subjected to a slowly increasing heat for several hours, to force the pieces to stiok together and beoome fit to weld. Then the glowing masses are taken ont of the furnace hy mesns of long tongs, then swung upon the anvil of a steam-hammer, and after an iron handle has heen welded to one end of the bundle, the hammer falls upon it. At first there is a great shower of red hot particles of iron and cinder, making the visitor keep at a respectful distsnce; but this soon ceases, and as the man at the hammer has it oompletely under control, the hlows grow stronger or lighter as is desired, until a compact piece of iron is formed called a "bloom." The handle is now cut off hy means of a large knife and one slight hlow of the hammer, and the hloom, still red hot, is put through

The Process oe Rolling.

The rollers (commonly called "rolls") are arranged in pairs, one roll ahove the other, in iron frames, and have grooves of various sizes and shapes turned in them. The "roller" seizes the hloom at one end with his tongs, and shoves the other end hetween the rolls at the largest groove. These catoh and carry the iron through to the other side, making it discharge a shower of impurities in its wake. Soon, however, it reappears over the top of the upper roll, sent hack hy the workman on the opposite side, and it is now mnch longer than at first. Again it is sent throngh, in a smaller groove this time, and comes back as before; this operation heing repested five or six times until the bundle is finally rolled out into a long flat bar. These hars sre cut np and made into piles ahout 2½ feet long and 10 or 11 inches square, which are reheated in furnaces near the rolls, and then passed through a different set of grooves from the former ones, coming out at last a rail in shape, hut with rough and ragged ends.

Sawing and Straightening.

The rail is placed upon an iron bench and moved up sideways against two circular saws with coarse teeth, which make 1200 to 1500 revolutions per minute. It is a heautiful sight, as the rapidly revolving saws throw off a profuse shower of small particles of iron, which burn with grest brilliancy while flying through the sir. To protect the workman, each saw is covered with a sheet iron screen. The rail now passes to a concave floor, or "hench," and is hammered with wooden mallets to fit this. A T or U rail is hroad and thin in its hase, in proportion to its top, and, therefore, if placed npon a flat bench, it will curve up on cooling, bnt the curved hench obviates this difficulty, so that when cold, the rail is nearly straight. After the ends hsve heen filed smooth, and the rail has been inspected, it passes under the straightening-press, where it is made true, and then, after a psir of holes have heen punched into its shank at each end to receive the holts for fastening the connecting bars, the rail is finished.

The calibre of a rail deponds upon its cross-section and its weight per yard. At these mills are made T rails of 50 to 60 pounds, and street rails of 30 to 38 pounds, per yard. A wonderful piece of mechanism which we see here is Gibson's

Spike Machine.

By the old process an iron rod of the proper size had first to be cut into pieces, then each piece heated twice in a forge fire, once for the head and once for the point; hut now the rod is heated in long pieces, and then pushed or "fed" into the machine, which cuts it off, makes a handsome and uniform head, and a point, all at one hlow. The point of each spike has two thin projections called "fins," which guide it when heing driven. Space does not allow us to describe in this connection how the various sizes of bar iron, nuts, bolts, etc., are made, nor to enter into a detailed description of all the varions machines in use at these works; suffice it to say that they can turn out 25 tons of merchant iron, or 35 tons of rails in one day, if necessary, with a force of about 130 men. A piece of economy worthy of notioe is, that there is a boiler huilt into the brickwork over each furnace and heated hy the waste gases, thus supplying all the steam consumed hy the varions engines, though there is a separate boiler and fire, to he used in case of necessity.

An Aerolite.—A meteor recently fell at Krahenhurg, Prussia, which weighed 31½ ponnds, and huried itself two feet deep in the sand-stone rock where it struck. It was dug out while still warm. The rushing sound made by it in its passage throngh the air was heard over a radius of thirteen miles.

Corrections.—In the article, "What are Metals?" on page 402, in the 12th line from the hottom for (Cu O+SO ⁴) read (Cu+SO ⁴); also, in the article last week on the occurrence of Thenardite, *heated* with chloride of harium was inadvertently printed, instead of *treated* with.

Safety Matches.—A London inventor has patented the soaking of matches, before dipping, in a solution of alum. They light easily and hurn well; hut as soon as the flame is hlown out, they hlacken, and may he thrown npon combnstihle matter without danger.

New Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreion Patent Agents, and Publishers of the Mining and Scientifio Press.]

For the Week Ending December 14th.

Scribe Hook.—John Nestor, Portland, Oregon.

Candlestick.—H. Zshn, Ssn Francisco.

Seeding Machine.—James Finlayson, Albany, Oregon.

Construction of Buildings.—Alex. McPherson, Santa Cruz, Cal.

Propeller.—Simon B. Morey, San Francisco.

Latch for Double Doors.—John W. Still, San Francisco.

Recent Patents.

Among the interesting and important patents recently issued to Pacific Coast inventors, the following sre worthy of mention:

Improved Anchor.—Elisha T. Barlow, San Francisco, Cal.—This invention relates to that class of anchors in which the flukes move from side to side of the shank, so as to get the proper position for taking hold of the ground. The flukes are made in two separato parts and attached to separste crown pieces. The anchor has two shanks moving parallel to each other, to one end of which the crown pieces with their respective flukes are attached, being holted to each shank so that the opposite longitudinal movement of the shanks will cause the flukes to move from side to side to the position for catching in the ground. To the opposite end of the shank, metal plates are so attached and fastened to the ship's chain or cable, that on drawing upon the cable, whichever shank is uppermost will be drawn forward, thus turning the fluke downward to the holding position.

Latch for Doors.—John W. Still, San Francisco, Cal.—The object of this invention is to provide a latch, which will operate equally well for a single door, or for either half of a double-door. It consists of an elastic strip of metal, extending ont hetween the doors, or the door and the casing. At the end of this spring is a wedge-shaped head, having its base inwards. The doors are slightly cut away, so that, in closing, they will press on the inclined side of the head, and bend the spring to one side until the doors has passed the head, when the spring returns to its original position and holds the door.

Pitch Board.—John R. Drew, San Francisco, Cal.—This is a board for measuring the height and width of steps. It is of triangular shape, one side being of suitable length for measuring the rise, another for measuring the tread; as in different stories of a house the stairs are built of different size, a different pitch board is necessary for eaoh flight. To avoid the loss of time and also of lumber in making these diffcrent boards, which may never be of use a second time, this board was constructed so that it can be extended at the sides, enabling the builder to set it to any desired size.

Construction of Buildings.—A. McPherson, Santa Cruz, Cal.—This improvement consists in laying between the conrses of brick, stone or other material, layers of lath, strips of wood for thin metal in such a way as to bind the wall in every conceivable direction. As these are also placed vertically, the walls are solidly bound together, and rendered exceedingly strong, and proof against the shocks of earthquakes, etc.

Propeller.—Simon B. Morey, San Francisco, Cal.—In order to obviate the loss of power caused by the buckets of the ordinary paddle wheel as they pound on and lift up the water on entering or emerging therefrom, this wheel contemplates a continuous and regular sculling, or to and fro side motion.

The Preservation of Wood by Hydro-Carbons.

ADDRESS BY CAPT. JAMES H. WHITE,

Before the Institute of Architects and Invited Guests, at the Mechanics' Institute, December 15, 1869.

Gentlemen, in compliance with your invitation of December 10th, I appear before you, and will endeavor to explain the process of preserving wood with hydro-carbons, as secured by Letters Patent to John Bethell, of England, in the year 1838, and to Luis S. Robins of the United States, in the year 1865, and express my opinion as to the benefits resulting therefrom.

EXPERIMENTS.

A series of experiments had been carried on for seventy years in the various naval departments of Europe and America, tending to the preservation of wood against the ravages of time and the destructive *Teredo Navalis*, or ship worm; but not till the year 1838 was any one of the various efforts successful.

Kyan, in 1832, patented a process for preserving wood with chloride of mercury.

Margary, in 1837, for preserving with sulphate of copper.

Bethell, in 1838 and 1848, with creosote or pitch oil.

Burnett, in 1838 and 1840, employed chloride of iron and sulphate of copper.

Boucherie, in 1839 and 1846, using pyrolignites of iron.

Payne, in 1841 and 1846, used sulphate of iron and carbonate of soda.

BETHELL'S PROCESS.

All of these processes for preserving wood have been cast aside as worthless, except Bethell's. His process differs from all the others in so far that the oil used—creosote, carbolic acid, or the phenol of Professor Faraday—is not only a most powerful coagulator of albumen, but it likewise preserves the fibre of timber. This process has been in use in England, Ireland, North and South America, in India, and all continental countries of Europe, wherever railways have been constructed; also, in harbor works, for which it is especially applicable by reason of its resisting the attacks of marine worms and insects. Doctor Ure asserts that the Bethell process produces perfect coagulation of albumen or sap, thus preventing putrefaction. Doctor Letheby states in the *Journal of the Society of Arts* that the preservative properties of creosote are of four kinds:

1st. That it coagulates albuminous substances, and gives stability to the constituents of the cambium and celluloso of the young wood.

2d. It absorbs and appropriates the oxygen which is within the pores of the wood.

3d. It resinifies within the pores of the wood, and in this way shuts out both air and moisture.

4th. It acts as a positive poison to the lower forms of animal and vegetable life, and so protects the wood from the attacks of fungi, acari, and other parasites. The above facts are from the *Chemical News* of May, 1869, as read before the Glasgow Philosophical Society, by P. M. Moir, February, 1, 1869.

In a report presented by the Minister of Public Works in Belgium, in May, 1863, to the Legislative Assembly, in respect to railroad timbers, he states that after a careful examination by the authorities, all creosoted sleepers (although some of them had been in use nineteen years) were found to be perfectly sound and fresh, which established the fact that the Bethell process was superior to all others, and that the Government had determined to have all their railroad timber creosoted in the future.

I could give you the testimonials of very many of the ablest scientists of the land to sustain the facts I have quoted, but think it unnecessary. The Bethell process, although an undisputed success, is nevertheless very expensive in the cost of machinery and manipulation, and can be used only upon seasoned and unmanufactured timber. Bethell's process is to saturate timber with liquid hydro-carbon under a pressure of 150 pounds to the square inch. He uses the raw coal tar, and by mechanical pressure forces the liquid into the wood. Expensive as this process is, it can only be used upon coarse work, such as bridge timbers, piers, railroad ties, etc. The machinery required to force the liquid into the wood is complicated, and demands skillful and scientific manipulation.

ROBINS' PROCESS.

Mr. Robins, the American inventor, profiting by the experience of Bethell, and accepting the testimony of scientific and practical men to the efficacy of coal tar and its products for preserving wood, invented his process, upon the basis of adaptability and economy, to meet the wants of the American people and the exigency of the times; and his efforts have been crowned with success, as is proven by the many testimonials of the ablest architects, engineers and chemists of our country, whose certificates are attached to his circular.

Robins' process is to place the wood in air-tight chambers, connected by a goose-neck with a large still containing the oil of coal tar, or crude petroleum, as may be desired. By heat the oil is converted into vapor, and passes into the chamber containing the wood. These vapors, he claims, drive the air out of the chamber, out of the pores of the wood, coagulate the albumen of the sap completely, and fill the pores of the wood with creosote or carbolic acid. The fibrous portions of the wood are saturated with the vapors of the oil, which condense in the wood, and thus prime it, and furnish a coating, which protects the fibre against moisture.

It is noteworthy that Bethell's is the forerunner of Robins' process; Bethell uses coal tar oils, Robins also uses coal tar oils. Bethell required the filling the pores of the wood with carbolic acid, or creosote oils; Robins demands the same conditions, and achieves the thorough saturation of all lumber with the preservative elements, which were only partially introduced by Bethell. Bethell availed himself of the liquid oil only, Robins uses the refined vapors of those oils; Bethell could make use of seasoned timber only. Robins' process is applied to seasoned or unseasoned wood, whether manufactured or unmanufactured.

The treatment of wood by the Robins process adds to its strength. This has been reduced to a certainty. Colonel M. O. Davidson, Chief Engineer of the New Haven and Derby Railroad, obtained certain pieces of wood, which he sawed, and caused one-half of each to be treated by the Robins process; he then sent the pieces treated and those untreated, of each kind, to Alban C. Stimers, Naval Engineer, New York, and requested him to make a thorough test of the relative strength of each. The following is Mr. Stimers' report, or an extract therefrom. He says the Robinizing adds to the strength of white pine, 37 per cent.; and white ash, 50 per cent. In conclusion, he says: "If we take a case of practical dimensions, such as a beam 20 feet long, between supports, 6 inches wide and 16 inches deep, we find that the ultimate strain required to be applied to the middle to break the beam will be in each case, as follows: White pine in its natural state, 20,966 lbs.; Robinized, 28,877 lbs.: white ash natural state, 51,272 lbs.; Robinized, 76,723 lbs.

The Robins process claims to treat all kinds of wood, and for all purposes, from the finest finish of buildings to the coarsest railroad ties and sleepers; also, all kinds of timber for houses, street blocks, and piles for wharves.

Such authority as Charles T. Jackson, M. D., State Assayer of Massachusetts; L. B. Hall, Professor of Chemistry, Dartmouth College; E. T. Quimby, Civil Engineer, Dartmouth College; J. S. Schanck, Professor of Chemistry of Princeton College, New Jersey; A. Guyot, also of Princeton College, Professor of Geology; George H. Cook, Professor of Chemistry and State Geologist of New Jersey, are a few among the many names of scientists who endorse the Robins mode of preserving wood. His circular also contains the names of many eminent architects and practical engineers, endorsing his process.

After nineteen years of trial and success with creosote, or carbolic acid oil, as a preserver of wood, it will not be saying too much to say it is no longer an experiment, but a demonstrated fact that wood can be preserved from decay by the use of hydro-carbonates properly applied.

STREET PAVING.

I hope it will not be out of place at this time to say a few words upon the subject of street paving. For the most important consideration to every commercial and growing city is her streets, pavements and roads, and their construction with proper materials. The subject of street pavements has long occupied the minds of many of our ablest inventors. Among the first devices to supply this want was the round cobble stone; next, the McAdamizing with small, hard stone, of about six ounces weight; next, the Russ blocks of trap rock, ten by fourteen inches, and eight inches deep; next, the Belgian, also of trap rock in six-inch cubes, laid like the Russ; next, the Guidet plan, lately introduced in New York, and as yet only an experiment. In this plan blocks of granite are employed, standing on edge; Size, twelve, eight and four inches, laid in sand. But the same objections will ever be made to all stone pavements by those living near—the noise of traveling vehicles—which, to many, is very annoying, besides the destruction to vehicles and the feet and limbs of horses.

Next is the concrete or asphalt paving, which is a combination of gravel, cinders, broken stone, sand, coal ashes and pine tar, laid upon a sand or rock bottom, from four to six inches deep. This is the well-known pavement used at Paris, and is highly spoken of. It is very doubtful whether this composition would stand the heavy usage permitted by our municipal authorities, and its first cost would be heavy. I would say just here that, about twenty-five years ago, the municipal authorities of the city of Saint Louis were compelled to pass an ordinance prohibiting wagons or trucks from passing over or upon her streets, carrying over a certain weight, and also prescribing the width of the tire upon the wheels, at 4 inches and nothing less, for all wagons carrying 80 bushels of bituminous coal, for at that day the city was supplied with wood and coal from the surrounding country. No wagon was permitted to carry upon the streets of the city, at any one time, over 80 bushels of coal, and all coal was to be weighed, and the owner to receive a certificate of weight from the officer appointed for that purpose. For offering or selling without a certificate, or with the tire less than 4 inches in width, the owner was subjected to a heavy fine. In the sale of wood, a cord in that city was made to contain 128 cubic feet, and when a citizen purchased a cord of wood he was sure to get it, whether the sticks were 3 or 4 feet long. If there should be some ordinance here regulating loads and width of tires, the city might receive a revenue from the same, and would protect her pavements. Allowing heavy trucks to haul what weights may please their owners, will soon cut any pavement to pieces.

WOODEN PAVEMENTS.

It is now conceded that wooden pavements, laid according to recent improved modes of construction, are in every respect superior to those laid with stone, cost what they may. Wood pavements are all paid for every two years in the saving of horse flesh and vehicles. We have several devices for wood pavements. The Nicholson, McGonagel Stafford, Stowe, De Golyer, Brockelbank and Trainer—all valuable devices. In this city we have tried the Nicholson and Stow pavements only, and acknowledging them to be the handsomest pavement and easiest of travel of any we have tried, they are a failure as to material and construction. The mere fact of dipping the blocks in hot coal tar or asphaltum, is no preservative against decomposition or expansion and contraction; and in a climate like this, such treatment is more injurious than beneficial. No wood pavement will or can be permanent and lasting without thoroughly carbonating all the wood with hydro carbons—first removing or destroying all the albumen or fermenting substance in the wood. This albumen is the cause of decomposition in all wood, and in a sanitary point of view is a fruitful source of disease from the unwholesome emanations emitted in the course of its decay.

THE CAUSE OF THE DECAY.

The Health Officer of Cincinnati, Doctor Clendenin, made three analyses and microscopical examinations of the dirt scraped from each of the different kinds of pavement in the streets of that city. He found the scrapings from the Nicholson wood pavement contained a much greater proportion of organic matter than either of the others, and that they are filled with vegetable fungeids, of a kind to seriously affect the public health. The Doctor has also investigated the subject of treating the blocks for the streets by the Robin's process, and compared notes with the Boards of Health of New York and Boston, and is convinced that wood treated in this way is not liable to decay; that the carbolic acid with which it becomes impregnated will exercise a disinfectant influence on the organic matters which come in contact with it in any shape, and that this treatment disposes of the objections to wooden pavements which have been heretofore urged by Boards of Health, on the score of their influence on the public health. These conclusions on the part of so able a scientist, as the Health Officer of Cincinnati, will have great weight with scientific men throughout the country. The force acting upon street paving is a crushing force. To show the resistance of such a force by wood treated in the manner proposed, experiments have been made with two equal sized cubes of the same kind of wood, one of which had been thoroughly treated with carbolic acid, or creosoted as it is termed, and the other not treated at all. A weight of fifteen tons was placed on each—the untreated cube was wholly crushed, its fibers being altogether broken; while the cube which had been subjected to the Robins treatment, retained the integrity of its fibers, and the wood was found to be compressed only one sixty-fourth of an inch.

The wood used in San Francisco for street pavements is the Oregon fir in its natural condition—simply sawed into blocks. It has a short life. We also have the redwood in abundance, which is a durable wood, when only exposed to the elements, but a very soft wood, too soft, in its natural state, for street paving. Redwood would be improved by treatment with hydro-carbons; as it has been fully proven by the French Government in experiments made from 1863 to 1868, that creosoting all woods makes them stronger and harder. The difference in the crushing weight to the inch cube between wood treated by the Bethell process and untreated wood, is as follows: Oak, 70 pounds; ash, 100 pounds; elm, 10 pounds; red spruce, 27 pounds; sycamore, 10 pounds; white spruce, 20 pounds. It must be understood, when we speak of treating woods with hydro-carbons, or carbolizing, or carbonating, that they are to be perfectly done, perfectly saturated in every pore, and perfectly seasoned. The Robins process will do this in my opinion. The main object kept in view, in this wood preserving process, is to make the wood, as near as practicable, as durable and as free from decomposition as charcoal, while uniting the fiber by the coagulating oils and crystals of carbolic acid, and thus increasing the strength of the wood.

This whole system of preserving wood can be summed up in a few words that all can understand: In the first place you must remove the albumen from the wood, or destroy its fermenting qualities; you must then occupy its place in the pores of the wood with carbolic acid and its associate disinfectant oils, introduced in the finest condition; you can have it in such a condition in a state of vapor, and when thus properly applied your work is accomplished.

The Pacific Wood Preserving Co., whose works are situated on Berry street, in this city, are the owners of the Robins patent.

COST OF MAKING IRON IN RHODE ISLAND. Rhode Island declares that it can make iron at a cost not exceeding $22 a ton. They have the mines of iron and coal, and are tired of paying Pennsylvania prices.

POLYTECHNIC LECTURE.—Mr. Hubert Burgess will deliver the next lecture at the Mechanics' Institute, on Thursday evening, January 6th, 1870,—continuing the subject of perspective drawing.

New Books.

THE POLAR WORLD: A Popular Description of Man and Nature in the Arctic and Antarctic Regions of the Globe. By Dr. G Hartwig. With additional chapters and 163 illustrations. New York: Harper & Brothers, 1869. 8vo. pp. 467. Received from and for sale by A. Roman & Co., S. F.

The narratives of expeditions to the polar regions have always had a powerful fascination for the general reader. And ever since Dr. Kane published his interesting accounts of, first, the Grinnel, and then his own, expeditions, books of the kind have been eagerly sought for, especially in the United States. Of late years, a large number of volumes have been written on the subject, but, as far as we know, there was no single work which covered the whole ground. The present volume, however, supplies this deficiency for the popular reader, treating as it does of all the polar regions, north and south. Condensing into a small space the valuable facts ascertained by numerous explorations, and at the same time being written in a very pleasant and readable manner, it makes a valuable addition to any library. We see but one thing to complain of, and that is the absence of any map.

We naturally turned to the chapter on Alaska, to see what were the conclusions about this late acquisition of ours. We find the following conclusion:

"Quite nine-tenths of the whole territory of Alaska is purely Arctic, and is not only uninhabited but uninhabitable. The other tenth is now sparsely inhabited, and there is little reason to suppose that the population will ever be greatly beyond its present number. Except in special cases, the possible population of a country is measured by its agricultural capacity. Leaving out of view the extreme northern parts of Alaska, the best accounts as yet accessible show that at St. Michael's, lettuce, parsnips and turnips can be raised by sowing them in beds. At Fort Yukon, potatoes not much larger than cherries can be raised. At Sitka, potatoes will grow a little larger. On some of the islands the inhabitants can even venture upon barley. The forest trees, which flourish in isolated parts, will soon be exhausted, as far as any profitable use of them is concerned. Fish and furs constitute almost the sole value of Alaska. The fisheries are among the most valuable in the world. The furs will soon be exhausted, unless prompt measures are taken to prevent the capture of fur-bearing animals in the breeding season."

On the subject of trees, we find, by the way, the following opposite opinion in the San Francisco *Bulletin:*

"We have before us some data furnished by a resident of Sitka, which shows that there is an extent of country bordering on the coast of Alaska, equal to twenty miles in width and 700 miles in length, in which the white and yellow cedar predominates. How much more extensive the "Cedar Country" may be, our informant did not know. The cedar timber is then inexhaustible. Our redwood timber covers a limited area, and at the present rate of destruction will not last fifty years. Probably no tree is now growing upon the Pacific coast of so much real value as the red cedar of Alaska."

USEFUL INFORMATION FOR RAILWAY MEN. Compiled for the Ramapo Wheel and Foundry Co. By W. G. Hamilton, Engineer. New York: D. Van Nostrand, 1869. Received from and for sale by A. Roman & Co., S. F. Price $2.

In this very compact and convenient pocket book is contained an immense amount of information on very varied topics. As its title indicates, railways take up the principal part of the work. It contains rates of postage; a very neat little railway map of the United States; notable events; lengths of different railroads; tables of weights and measures and time; all sorts of tables with regard to iron, steel, rails, car wheels, cars, bridges, locomotives, fuel, costs, etc., etc.; various statistics of interest; and even recipes for various common cases of sickness. Just now we have many railroad men who will profit by the perusal of such a hand book.

PHEBE TRAVERS, or One Year at a French Boarding School. By Aunt Florida. Illustrated. 12mo, pp. 192. San Francisco: A. Roman & Co. Price 75 cts.

This is another of the pretty stories for children, which are getting so numerous. This little history is very nicely and attractively written, and is highly to be recommended to child-readers.

Mining in Australia.

The *Mining Record*, of June 19th, published at Melbourne, contains a review of "The gold fields and mineral districts of Victoria," by R. Brough Smyth, Secretary for Mines, for the colony, from which we quote the following statistics in reference to quartz mining in Australia, which may be read with interest, if not with profit, by those who have, as well as those who have not, faith in that business:

The existence of gold in Australia was first made public in 1852, three years subsequent to its discovery in California. Up to December 31st, 1868, there were 5,811,-669 tons (2,240 lbs per ton) of quartz, mined and milled, which averaged 11 dwts. 12.37 grs. of refined gold per ton—$11.50. The Port Philip Company commenced operations in March, 1857. From that date to March, 1869, twelve years, they mined and worked 470,839 tons of ore, which produced an average yield of 10 dwts. 18 grs. —$10.75 per ton.

For some time past, the yield from the company's mines (5) has averaged little, if any, over $7 a ton; yet the shares are fifty per cent. above par. The company have recently built another mill, with 24 stamps, which make in all 104 stamps, with a capacity to work about 6,000 tons a month. They employ Chambers' stone breakers, similar to Blake's, and use self-feeders for their batteries. Their appliances for saving gold are similar to those in general use in California. The capital of the company—£100,-000—is divided into 100,000 shares, of £1 each, which, notwithstanding the reduced yield of the ore, are now about fifty per cent. above par.

In the colony, there are sixty-nine quartz companies paying dividends; the shares of one, the "Clunes, Clunes," are quoted at £475—for £1 paid! There are also sixty-nine companies which are not paying dividends, yet the shares of many of them command a high premium on the amount *paid in*.

There are twenty-seven alluvial companies paying dividends, against thirty not paying dividends. These statistics refer to those companies only whose shares are on the market.

The number of gold mining companies registered in the several Courts of Mines up to the 31st of December, 1868, is 2,471; the number of shares, 7,421,492; and the *nominal* capital £24,431,205. It is estimated that not more than ten per cent. of this capital has been paid up.

The length of water races constructed by miners is 2,434 miles, at a cost of £310,270, equal to £127 9s. 5d., or $637 a mile.

In 1867, the population of the colony was 659,887. The imports, £11,674,080. The exports, £12,724,427. Gross revenue, £3,-210,504. Expenditure, £3,368,536. Acres under cultivation, 631,207."

As a knowledge of what has been, and is being done, in a distant country, occupied by people similar to our own, may lead to a better knowledge and a better appreciation of the resources of our own State, we propose to make further quotations, not only from the valuable and important work of Mr. Smyth, but from the *Mining Record*.

An English paper says that photographic portraits can be printed with printer's ink. They are as permanent as a printed text, and so easy of production that 12,000 may be made from a single plate in one day.

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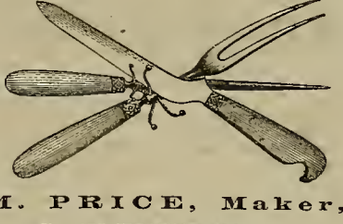

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3 cases	E. G. Whitcomb	132 00
2 bags quartz	Geo. Roberts	39 50
1 tub & cont's; 1 bag	C. S.	41 00
1 sack ore	John Nightingale	38 50
1 ½ cask	F. C. Belden	37 50
1 case	Capt. J. Porter	37 50
1 sack rock	N. M. Buffington	36 50
1 case	J. F. Sherwood	36 50
1 firkin	D. O. C.	35 50
6 sacks quartz	E. M. R.	61 1
1 sofa frame; 3 pkgs	W. L. Needman	35 50
1 box (H. P.)	H. Palmer	36 50
1 case (J. M.)	J. Mosheimer	36 25
1 sack cement	McDonald	33 50
1 sack rock	H. A. Gleson	35 50
1 keg wine	Witts	34 50
1 cask	A. B. Earle	51 30
1 lot traps	Mrs. Carpenter	62 25
1 case	W. Kronse	31 50
1 fence	N. Williamson	33 00
1 bale sacks	J. M. S. Taylor	31 50
1 sack rock	E. N. Robinson	30 50
1 case	S. Loffman	30 50
6 small cases	H. Hanheimer	49 00
2 cases	S. F. B. Factory	29 75
1 case	E. W. Roberts	29 60
1 box	Chas. E. Lang	28 50
1 box merchandise	C. H. & Co.	28 50
1 trunk	Chas. P. Wilder	29 50
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1 box	O. R. Woodman	27 25
1 case	A. H. Wilber	29 50
2 sacks quartz	W. H. Smith	27 00
1 ½ cask	M. B.	21 50
1 bdle decr skins	L. Deechen	21 50
2 cases	G. S. Beardsley	21 50
2 hay forks	John Findley	20 50
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4 pkgs pipe and iron	S. P. Roberts	32 85
1 bbl whisky	B. Mendersoll	21 00
1 box	J. & F. & Co.	20 50
2 iron hubs; wire cloth	Treadwell & Co.	20 00
1 pkg castings	Wm. Lynn	20 25
1 trunk	Mrs. Willis	21 00
1 case	S. W. & Co.	18 50
1 box	L. Daneri	19 50
1 barrel	J. H. Seadent	19 00
4 boxes	G. A. Dyson	53 75
1 case bacon	H. Rosstent	18 75
1 case	Locke & Montague	30 75
1 case	Cal. Fuse Co	19 50
1 bbl wine	Frank Glas	17 00
2 bundles	Order	15 50
1 bdl sash	T. J. Hughes	30 79
1 box	S. S. Allen	30 00
2 cases	S. Hamuck	17 50
1 case	Thos. Thyser	44 00
6 boxes	Union Tel. Co.	31 00
10 cases	L. P. & Co.	22 75
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24 bbls sal soda	Order	95 00
4 pks (B in diamond)	Order	68 60
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1 bundle	Dr. Matthews	49 25
1 bale	W. Shears	47 50
2 cases and 1 hf bbl	Mrs. A. Holmes	43 00
1 case	Orik Johnson	40 75
1 case	Mrs. Flannigan	44 90
1 box	J. H. O'Brien	24 25
1 chest	W. H. Dalrymple	51 12
1 case	J. S.	23 25
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1 case and 1 trunk	Mrs. S. P. Penney	49 40
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1 box	Lams & Co.	29 25
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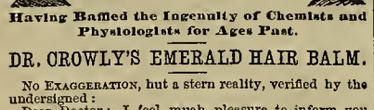

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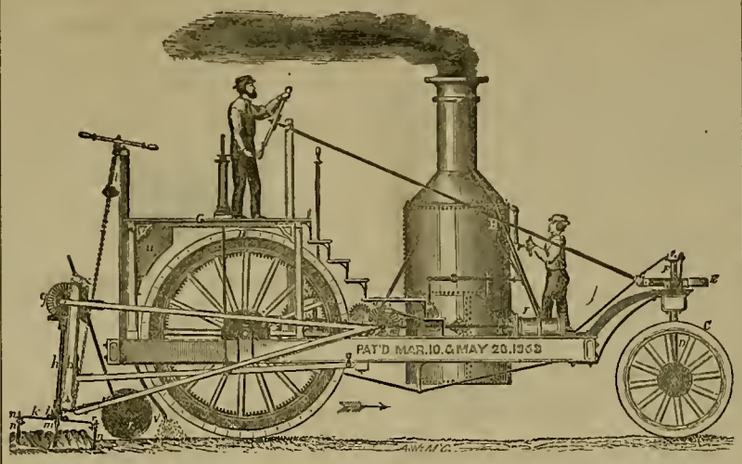

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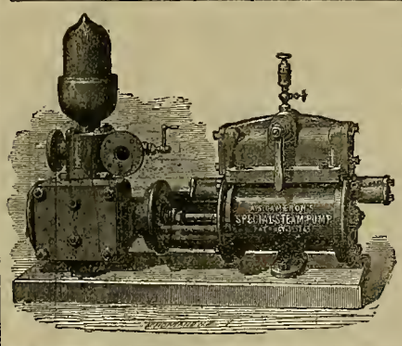

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The Largest and most Modern Designs of GAS FIXTURES, including Parisian Patterns, Gold Gilt, are to be found at

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—ALSO—

Mantel Clocks, Statuettes and Portables,

Suitable for Holiday Presents,

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THOMAS DAY.

☞ Everything connected with Gas and Plumbing to be found as usual at

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CONSULTING ENGINEER
Examiner of Mines, etc.,
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(Having had 33 years' experience in Europe and America, supplies drawings and designs for Cumming, Hoisting, Crushing Separating, Roasting, Chlorinizing, Milling, Lixiviating, Precipitating, and Smelting Works. Minerals analyzed, and advice given for beneficial treatment. Lessons on the Discrimination and Assay of Minerals by Blowpipe, Chemicals, Scorifier and Crucible. 4v17tf

DR. KNOWLES, Dentist,

HAS REMOVED FROM MONTGOMERY to 331 Kearny street, west side, between Pine and Bush, San Francisco.
21v18-1y

J. BALL,
DENTIST,

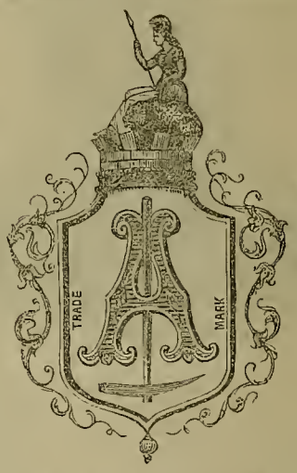
645 Clay Street, bet. Montgomery and Kearny,
SAN FRANCISCO. 20v19-1m

JOHN ROACH, Optician,
Has removed from 522 Montgomery street to
540 Washington street,
East of Montgomery.
Surveying Instruments made, repaired and adjusted
22v17-3m

JAMES M. TAYLOR,
Attorney and Counsellor at Law,
Court Block, 636 Clay Street,
SAN FRANCISCO.
2v15-1qy

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
27v16 SAN FRANCISCO.

R. G. ROWLEY,
ATTORNEY AND COUNSELOR AT LAW,
618 Merchant street,
Between Montgomery and Kearny. P. O. Box 2102, San Francisco. 1v19tf



New Almaden Vichy Water,

(CALIFORNIA VICHY WATER.)

FROM THE SPRINGS,
NEW ALMADEN,
Santa Clara County.

F. L. A. PIOCHE.....Proprietor
O. CHAUVIN.....Agent.

OFFICE, 506 JACKSON STREET,
GENERAL DEPOT:
Corner of Jackson and Montgomery streets.

This Mineral Water is especially useful and very powerful, not only in the course of certain diseases, but also as a preventive of intermittent fever, chronic rheumatism, gout, scrofula, general debility arising from disorder of the nervous system and circulation of the blood, and especially of the vicious circulation.

It is necessary to observe, in this connection, that, since the action of this water is very powerful, it must be used in cases of sickness with the advice of a PHYSICIAN, for there are cases where a patient could not make use of it with impunity, at least in the beginning of a course of treatment(*). On the other hand, the composition of Vichy Water renders it highly efficacious as an adjuvant to the action of certain medicines which, without it, could not be digested, and would therefore remain ineffectual. It is a fact that, for some diseases, the action of this Mineral Water cannot be efficacious without the use of certain medicines which the physician only can properly prescribe. The omission of that precaution is the reason why many patients do not find in mineral waters in general all the relief they might otherwise derive from them.

California Vichy Water is used with success in many cases, such as—

Impoverishment of the Blood; Weakness of Nervous System; Chronic Inflammation of Liver, Stomach, Spleen, Spine, Womb, Intestines, Ovaries, and Inflammation generally, *when there is no fever*; Dyspepsia in all its stages; Loss of Appetite; Bad Digestion; Flatulency; Constant and Tenacious Vomiting; Weakness of certain Organs; the indispositions peculiar to Women; Frequent Uterine Hemorrhage; Hemorrhoides; Obstruction of Liver and Spleen; Night Sweats; Chronic Rheumatism, *when without fever*; Gout, *when the patient is still able to walk*; Gravel, and in cases of Diabetes, the New Almaden Vichy Water is a most powerful adjuvant to the remedies prescribed for this terrible disease.

(*) Besides its Medicinal qualities, this Mineral Water is a most agreeable beverage at meals, or at any time of the day, pure or mixed with Water, Beef Broth, Red Wine, White Wine, Champagne, Brandy, Milk, etc.

PRICE—12 Bottles, at the General Depot, $4. Returned Bottles Bought for Five Cents apiece.

Twenty-four Half Bottles, $5. Returned Bottles Bought for 50 cents per dozen. 26v18tf

[SPECIAL NOTICE.]

Winn's Patent Shampooing Apparatus

By the use of the apparatus here shown, the unpleasant mode in which the operation of shampooing is usually performed, is converted into a neat and tidy process, very effective and decidedly agreeable. By the aid of this apparatus, the head is washed and scrubbed in a bath of water, of any desirable quantity or temperatnre, and the employment of which, upon the top of the head, is productive of the most delightfully agreeable sensations, such as impart an entirely new feature to the process of shampooing. The apparatus is tasteful as well as substantial in its construction; and its use is equally as effective when applied to the long, flowing hair, as worn by the ladies, as to the shorter hair of gentlemen's wear.

To form this apparatus, a rim or bottomless pan is first constructed, with a gutta percha lining so devised and provided with an elastic strap, as to fit tightly around the head, below the principal part of the hair. The drapery or curtain, which is seen to fall below the rim, is both for ornament and use; it serves to conceal from view the somewhat unsightly straps, lining, etc., which form the water-tight joint between

the head and apparatus thereto applied, and a subsequont elastic gutter, which is strapped tightly about the head, at the extreme lower part of the hair, to catch any water which may possibly escape from the main apparatus. As seen in the engraving, each has a flexible tube appended, by which the water may be carried off to a sink or other suitable receiving vessel, so that the person will have no occasion to leave his seat during the entire operation, or even to remove his neck-tie.

The soap-suds or any other shampooing fluid which may be employed, is poured upon the top of the head, within the rim, after it has been properly adjusted, and a brush or mop, or sponge, or any other suitable instrument, is then employed within the body of the liquid to clean the head and hair. The liquid is readily discharged through a stop-cock and the tube shown in the rear, and fresh water for rinsing applied, as often as may be desirable. Standards, with curved rests or supports, placed upon the shoulders, and adjusted by screws upon the top, all shown in the engraving, are affixed for the purpose of taking the weight of the apparatus and a portion of the weight of the water from the head. The flexible rim which adjusts the apparatus to the head makes this device practicable.

Previous to putting on the rim an elastic strap is placed around the head to hold up the hair intended to be included within the rim, when it may be properly washed and cleansed. This arrangement is particularly useful and indispensable in fact, in shampooing the head of a lady with flowing hair. This combined apparatus renders the process of shampooing as easily and as readily performed for a lady as for a gentleman. Mr. M. L. Winn, of this city, the inventor and patentee, exhibited his apparatus and the practical employment of the process, in the Mechanics' Fair, and will soon open a saloon in this city. The patent was obtained by the M. & S. PRESS PATENT AGENCY.

One Per Cent. per Month

Allowed on Six Months' Deposits by the CALIFORNIA BUILDING, LOAN AND SAVINOS BANK, California street, one door from Sansome.

THOMAS MOONEY, President.

August 2, 1869. 6v19-1m

To Advertisers.

After January 1st, 1870, the latest hour for receiving mining and other advertisements for the M. AND S. PRESS will be during Thursday evening, as our paper will be printed for the interior mails on Friday morning.

WANTED.

A situation in a Quartz Mill to do Millwright and Carpenter work. Address, B. C. B., Fisherman's Bay, Sonoma County.

18v19-1m

LOST.

Two Shares Stock MECHANICS' MILL AND MANUFACTURING CO., No. 25; paid February 3, 1868. The finder will be suitably rewarded by leaving them, with the owner,

T. HANDSBURG,
Office Mechanics' M. & M. Co.

23v19-3m

The Scientific Press.

MINING, FARMING, AND MECHANIC ARTS.

After January 1, 1870, our paper will resume the above abbreviated title (under which it was established in 1860), instead of "MINING AND SCIENTIFIC PRESS." It will continue to be devoted to the improvement and progress of the three great branches of industry named above, whose interests are intimately associated on this coast, and popularly and reliably represented in the PRESS.

Subscription Price Reduced to $4 Per Annum.

Our other charges will be at the lowest rates. Our large and increasing circulation enables us to make this reduction, and at the same time enlarge the amount of reading matter and add improvements in every department of our paper and patent business.

DEWEY & CO.,
U. S. and Foreign Patent Agents, 414 Clay street.

STEEN & CUSHING,

AGENTS FOR THE

PURCHASE AND SALE

—OF—

Patent Rights, Engines, Boilers,

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MACHINERY OF ALL KINDS.

NO. 9 FIRST STREET, SAN FRANCISCO.

WE HAVE ON HAND IN GREAT VARIETY,

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Steam and Hand Pumps,	Injectors,
Pipe,	Lathes and Planers,
Presses,	Governors,
Shafting,	Steam Gauges,
Pulleys,	Quicksilver,
Boxes,	Gas Stocks and Dies,
Mill Stones,	Belting,
Portable Mills,	Water-tanks, etc.,

Which we will sel at a discount of 25 to 75 per cent. on cost of new, in this city. Parties having any kind of machinery for sale, may meet with customers by consigning to us. Purchases made on Commission, and prices guaranteed as low or lower than parties can make themselves.

STEEN & CUSHING,
No. 9 First street, San Francisco.

MAGAZINES.	Per An.
Harpers	$ 4 00
Atlantic	
Godey	
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Good Words	
Peterson's	3 00
Arthur	
Lady's Friend	
Harper's Weekly	5 00
Chimney Corner	
Literary Album	
London Society	6 00
All the Year Round	
London Ill. News	15 00

W. E. LOOMIS,

News Dealer

AND STATIONER,

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SUPPLIES ALL

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By the Year, Month or Number

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Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention.

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Price $1. Cloth Binding.

A NEW EDITION

OF OVER 500

ILLUSTRATED

MECHANICAL MOVEMENTS.

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Publishers Mining and Scientific Press

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THIS IS A CHEAP BOOK,

Notwithstanding most Scientific and Mechanical works are costly.

No Inventor or Patentee should be without it.

It is interesting to all classes of Mechanics, Farmers, and others, who have more or less to do with constructing machinery. It is

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$1, POSTAGE PAID.

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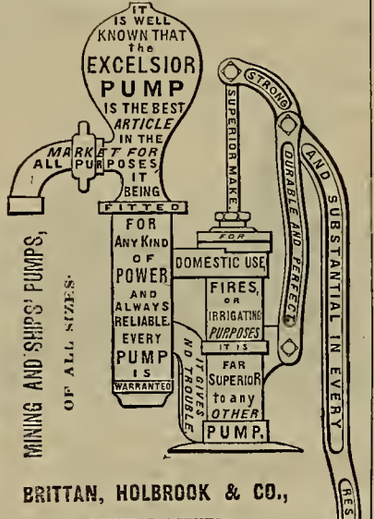
Publishers and Patent Agents, Mining and Scientific Press Office, San Francisco.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MINING AND SHIPS' PUMPS, OF ALL SIZES.

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GENERAL AGENTS,

111 and 113 California Street,

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For Miners, Millmen and Metallurgists.

KUSTEL'S NEW WORK,

CONCENTRATION

Of all kinds of Ores, and the

CHLORINATION PROCESS,

For Gold-Bearing Sulphurets, Arsenurets, and Gold and Silver Ores generally.

Price. - - - - $7.50

A liberal discount to the Trade. For sale by the Booksellers Sent to any part of the United States, postage paid, on receipt of the price. Address,

DEWEY & CO., Publishers,

Office of the Mining and Scientific Press, 414 Clay street

1v16tf SAN FRANCISCO. 1868.

W. T. GARRATT,

City

BRASS AND BELL FOUNDER

Cor. Mission and Fremont sts.,

SAN FRANCISCO.

Manufacturer of Brass, Zinc, and Anti-Friction or

Babbet Metal Castings;

CHURCH AND STEAMBOAT

BELLS,

TAVERN AND HAND BELLS AND GONGS,

FIRE ENGINES, FORCE AND LIFT PUMPS

Steam, Liquor, Soda Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder and Copper Rivets, &c. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles,

HYDRAULIC PIPES AND NOZZELS

For Mining purposes, Iron Steam Pipe furnished with Fittings, &c. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

☞ Highest Market price paid for OLD BELLS, COPPER AND BRASS. ☜ 6tf

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Saw Smithing and Repairing

ESTABLISHMENT.

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MANUFACTURER OF

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Patent Tooth Circular Saws.

They have proved to be the most durable and economical Saws in the World.

Each Saw is Warranted in every respect

Particular attention paid to construction of

Portable & Stationary Saw Mills.

MILLS FURNISHED AT LOWEST NOTICE,

At the lowest Market Prices.

Important to Assayers.

Crucibles.

The Patent Plumbago Crucible Co.,

Manufacturers of all kinds of

Melting Pots, Portable Furnaces,

CRUCIBLES, and other fire-standing Goods,

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THE MORGAN PATENT CRUCIBLES have uniform quality, never crack, withstand the greatest heat without danger; heats more rapidly than any other; change of temperature has no effect on them; stand on the average forty to fifty pourings.

CERTIFICATES:

United States Branch Mint, San Francisco, Cal., March 12, 1869—Messrs. A. S. Hallidie & Co., Agents Morgan Crucible:—I have carefully tested the Morgan Patent Plumbago Crucibles purchased from you for the U. S. B. Mint, and cheerfully certify to their superiority and economy over all other Crucibles used by and under me. They are fully what you represent them, and I shall continue to use them in preference to any other. J. M. ECKFELDT,

Melter and Refiner, U. S. B. Mint.

Eagle Brass Foundry, 206 Fremont street, San Francisco 12th March, 1869—Messrs. A. S. Hallidie & Co., 519 Front street—Gentlemen:—We have used and tested the Morgan Patent Plumbago Crucible, for which you are agents, and pronounce them superior to and cheaper than any Crucible used by us heretofore. GREENBERG & MOORE.

Messrs. A. S. Hallidie & Co.:—We have thoroughly and severely tested in every way the Morgan Patent Plumbago Crucible obtained by us from you, and find them superior to any we have yet tried, although we have used every pot obtainable in this market, we have none equal to the above, and concede your claims for them. We think they will average 45 pourings of brass.

GALLAGHER, WEEN & CO.,

California Brass Works, 125 Front street, San Francisco.

Assay Office of H. Harris, Silver City, Nevada, April 24, 1869—Messrs. A. S. Hallidie & Co.—Gents:—I received from you three Crucibles of the Morgan make, which I have used since their arrival, and tested by constant use. Since 1847, when in the New Orleans Mint, I have always preferred the Crucible of Dixon's make over Adus, Gautier, and Taunton, Mass. Yours I find to be not alone of more finished make, but to stand double or treble the work of Dixon's Crucibles. The No. 12—the smallest sent—has stood so far 32 meltings, and is as good and sound as when received. Your Crucibles do not scale off like others; and as they are forty per cent. cheaper, I do not see why they should not be preferred by all assayers on account of durability and cheapness. Yours respectfully, H. HARRIS.

On hand and for sale by the Agents,

A. S. HALLIDIE & CO.,

18v18-9p 519 Front street, San Francisco

Sheffield Scientific School

Of Yale College, New Haven, Conn.

This department of Yale College, instituted in 1840, and endowed with the National Land Grant in 1866, furnishes advanced instruction in the various branches of Mathematical, Physical, and Natural Science.

The School is under the direction of the President of the College, a Board of thirteen Professors in differe specialties, and six assistant instructors.

Regular courses of study, leading to the degree of Bachelor of Philosophy, conferred by Yale College, are arranged as follows: 1—CHEMISTRY AND MINERALOGY. 2—CIVIL ENGINEERING. 3—MECHANICAL ENGINEERING. 4—MINING ENGINEERING AND METALLURGY. 5—AGRICULTURE. 6—NATURAL HISTORY AND GEOLOGY, and 7—SELECT COURSE.

Advanced students are also admitted to optional courses, and if already College graduates, are received as candidates for the degree of Doctor of Philosophy.

Tuition, $125 per year of forty weeks.

The Libraries, Museums, Laboratories and Apparatus, accessible to students, are varied and extensive.

For copies of the Annual Circular and Report, letters may be addressed to the "Secretary of the Sheffield Scientific School," New Haven, Conn. 13v6-1y16p

New Incorporations.

PLACERVILLE & SACRAMENTO VALLEY R. R.—Dec. 17. Capital stock, $750,000, divided into shares of $100 each. Trustees: L. L. Robinson, Charles E. McLane, Hall McAllister, F. L. A. Pioche, William Alvord, Jonathan Hunt, and F. A. Bishop.

CALIFORNIA & OREGON R. R. Co.—Capital stock, $15,000,000. Directors: L. Stanford, C. P. Huntingdon and others associated in the Central Pacific R. R. Co. The road is to extend from Roseville, Placer county to some point in Oregon.

CALEDONIA MINING Co.—Gold Hill Co., Nev. Dec. 22. Capital stock, $2,000,000, divided into 20,000, of $100 each. Trustees: W. J. Williams, A. Doble, A. J. Downer, W. F. Halsey and Martin White.

IRON MOUNTAIN Co.—The object is to mine for, reduce and manufacture from iron ores in this State. Capital stock, $500,000—5,000 shares of $100 each. Trustees B. F. Meyers, J. R. Brown and C. F. Robison.

WAUCOMA WATER Co.—San Diogo. Capital, $15,000. Trustees: W. W. Tracy, T. J. Moore and W. H. Cleveland,

A Word for Home Inventors.

OAKLAND, CAL., December 1, 1869.

MESSRS. DEWEY & Co.—Gentlemen: Permit us through your paper to return our earnest thanks for the prompt and successful manner in which you have conducted the various matters of business with the Patent Office committed to your care, more especially in securing for us our last valuable patent in the face of so many difficulties. Were it an ordinary case, in which you had simply secured us a patent, and for which services you had received a suitable equivalent, we should hardly consider you entitled to our thanks, however much we might feel gratified with your professional ability, uniform courtesy, or success. But this seems to be an exceptional case, and entitled to peculiar consideration. Without entering here into a detailed account of the legal complications and various discouraging circumstances you were obliged to contend with, suffice it to say, that your almost unhoped for success, securing, as you did, a full patent, despite all these obstacles, in so short a time, was scarcely less surprising than gratifying to us; and we feel it a pleasant duty to offer you this merited testimonial of our appreciation for the valuable services rendered, and to return you our sincere thanks for the same.

In closing, we would say to the public that this is entirely voluntary on our part, as Messrs. Dewey & Co. neither asked it at our hands, nor knew that we intended giving it. It is simply a free-will offering to professional skill and reliability, and a word of friendly counsel to others on this coast who may be possessed of valuable inventions on which they wish to secure patents. To all such our earnest advice is to place them at once in the hands of Dewey & Co., instead of being driven to it by a sad experience like our own.

Yours truly, HUBERT BURGESS,
JAMES STRATTON.

FOR AN IRRITATED THROAT, Cough or Cold, "Brown's Bronchial Troches" are offered with the fullest confidence in their efficacy. They have been thoroughly tested, and maintain the good reputation they have justly acquired. As there are imitations, be sure to obtain the genuine.

To a lady friend, no present would be more acceptable than a pair of opera glasses. C. Muller, 205 Montgomery, has a fine assortment. ***

CONTINENTAL Life Insurance Co., 302 Montgomery street, corner of Pine.

PAIN KILLER, after a thorough trial by innumerable living witnesses, has proved itself THE MEDICINE OF THE AGE. It is an internal and external remedy. One positive proof of its efficacy is, that its sales have constantly increased, and wholly upon its own merits. The effect of the Pain Killer upon the patient when taken internally, in case of Cold, Cough, Bowel Complaints, Cholera, Dysentery, and other affections of the system, has been truly wonderful, and has won for it a name among medical preparations that can never be forgotten. Its success in removing pain, as an external remedy, in cases of Burns, Bruises, Sores, Sprains, Cuts, Stings of Insects, and other causes of suffering, has secured for it such a host of testimony as an almost infallible remedy that it will be handed down to posterity as one of the greatest medical discoveries of the nineteenth century.

REDINGTON & CO. and HOSTETTER & SMITH, San Francisco, General Wholesale Agents. de4

Use Pain Killer for Cholera and Bowel Complaints, for Boils, Cuts, Bruises and Scalds, Old Sores Sprains, Swelling of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Frosted Feet, Felons, **Sore Throat, Sudden Colds, Coughs, Etc.**

Use it for any of these, and you will never do without it. Its success as a valuable family medicine has induced others to initiate and counterfeit the Pain Killer to some extent. *Beware of Counterfeits!*

PHOTOGRAPHY.—FOR CABINET PHOTOGRAPHS, or Enameled Cards, of the very best quality, you must go to the NEW YORK GALLERY, Nos. 25 and 27 Third street, San Francisco. Every picture warranted to give satisfaction.
10v18 6m B. F. HOWLAND.

RETURNED.—Dr. J. H. Paino, Dentist, Wadsworth House No. 225 Bush street, between the Occidental and Cosmopolitan Hotels, San Francisco. 21v17-4m

SEND FORMER ADDRESS when you wish your paper directed to a new place.

BLOCK TIN AND SOLDER WIRE, broom wire, piano covering wire, etc., manufactured by Josbua Gray, 437 Brannan street. 24v19-3m

New Mining Advertisements.

Intawana Mining Company.—Location: Near Hamilton City, White Pine, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, held on the twenty-second day of December, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at 614 Merchant street, Room 26, or at 526 California street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twenty-ninth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the nineteenth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. MARTINON, Secretary.
Office, 614 Merchant street, Room 26, or 526 California street, San Francisco. dec18

La Blanca Gold and Silver Mining Company.—Location of Works: San Antonio, District of Ures, State of Sonora, Mexico.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the fifth day of November, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Sonnenberg, L B	19 2-2	12	$12 00
Schleicher, Jacob	84	15	15 00
Schleicher, Jacob	105	5	5 00
Schleicher, Jacob	159	5	5 00
Schleicher, Jacob	308	5	5 00
Schleicher, Jacob	372	5	5 00
Schleicher, Jacob	389	11	11 00
Werthelmer, E	227	10	10 00
Hildebrandt, G W	224	10	10 00
Hildebrandt, G W	238	10	10 00
Hildebrandt, G W	244	10	10 00
Hildebrandt, G W	262	10	10 00
Hildebrandt, G W	347	8	8 00
Hildebrandt, G W	393	2	2 00
Hildebrandt, G W	435	2	2 00
Harlmann, Charles	136 323	12	12 00
Klivesahl, E W	148	5	5 00
Klivesahl, E W	269	5	5 00
Klivesahl, E W	330	1	1 00
Klivesahl, E W	380	5	5 00
Klivesahl, E W	397	5	5 00
Klivesahl, E W	400	3	3 00
Trenkle, E	456	6	6 00
Dieffenbacher, Eliza	533	6	6 00
Thyes, Adolphine	534	10	10 00
Thyes, Hermann	535	109	109 00
Mayrisch, Marie	366	1	1 00

And in accordance with law, and an order of the Board of Trustees, made on the fifth day of November, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Doro & Co., No. 327 Montgomery street, San Francisco, on Tuesday, the twenty-first day of December, 1869, at the hour of 12 o'clock M. of said day; to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOSEPH GOLDMAN, Secretary.
Office, No 312 Front street, San Francisco, Cal. dec4

POSTPONEMENT.—The above sale is hereby postponed until Monday, the twenty-seventh day of December, 1869, at 12 o'clock M., at the salesroom of Maurice Dore & Co. By order of the Board of Trustees.
dec25 J. GOLDMAN, Secretary.

Pochontas Gold Mining Company.—Location of Works: Mud Springs, El Dorado County, State of California.

NOTICE.—There are delinquent on the following described stock, on account of assessment levied on the twelfth day of November, 1869, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
A D Moore	28	40	$200 00
J W Raymond	32	40	200 00
J L Requa	31	40	200 00

And in accordance with law and an order of the Board of Trustees, made on the twelfth day of November, 1869, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the salesroom of John Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, Cal., on Wednesday, the twelfth day of January, 1870, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

D. A. JENNINGS, Secretary.
Office, 410 California street, San Francisco. dec25

Taylor Mill and Mining Company.—Location of Works: Georgetown District, El Dorado County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the sixteenth day of November, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
T B Bishop	17	500	$150 00
S S Murfey	18	500	150 00
S S Murfey	19	1000	bal. 100 00

And in accordance with law and an order of the Board of Trustees, made on the sixteenth day of November, 1869, so many shares of each parcel of said stock as may be necessary will be sold at the auction house of John Middleton & Son, No. 310 Montgomery street, San Francisco, Cal., on Monday, the tenth day of January, 1870, at the hour of 12:30 P. M. of that day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

SAM'L S. MURFEY, Secretary.
Office, No. 520 Montgomery street, over Sather & Co's Bank, San Francisco, Cal. dec25

Yosemite Mining Company, Oro Fino District, Humboldt County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifteenth day of December, 1869, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco, or to J. T. MACLEAN, Superintendent, at the mine.

Any stock upon which said assessment shall remain unpaid on the nineteenth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fifth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary pro tem.
Office, 220 Clay street, San Francisco, Cal. dec18

Mining Notices--Continued.

Arctic Silver Mining Company.—Location of Works: Cortez, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of September, 1869, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to S. Wenban, at Cortez.

Any stock upon which said assessment shall remain unpaid on the twentieth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.
Office, 426 Montgomery street, San Francisco. dec18

Cassell Silver Mining Company.—Location of Works: Cortez, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day of December, 1869, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, or to S. Wenban, at Cortez.

Any stock upon which said assessment shall remain unpaid on the twentieth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.
Office, 426 Montgomery street, San Francisco. dec18

Chicago and Detroit Consolidated Gold and Silver Mining Company.—Location: Chicago Lode and Company and Detroit Lode and Company, Monitor District, Alpine County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
W H Sharp	3	100	$50 00
J L Schroeder	5	100	50 00
A Casell	6	100	50 00
J Landsmann	13	100	50 00
C Martin	7	50	25 00
G Mahe	8	50	25 00
W H Hagermann	9	50	25 00
J C Yunge	10	50	25 00
G F Sharp	12	50	25 00
S Mayer	11	50	25 00
H Dreschfeld	14	145	72 50
L Rosenbaum	43	50	25 00
L Adler	47	5	2 50
C Wennerhelz	20	10	5 00
W A Ilse	42	33	16 50

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction by J. Middleton & Son, at their salesroom, 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

Glenwood Mill and Mining Company, Greenwood, El Dorado County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the thirteenth day of December, 1869, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at his office, 418 California street.

Any stock upon which said assessment shall remain unpaid on the tenth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the first day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. D. SQUIRE, Secretary.
Office, No. 418 California street, San Francisco. dec18

Idaho Silver Mining Company.—Location of Works: Cortez, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the seventeenth day December, 1869, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, or to S. Wenban, at Cortez.

Any stock upon which said assessment shall remain unpaid on the twentieth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Tuesday, the eighth day of February, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. N. VAN BRUNT, Secretary.
Office, 426 Montgomery street, San Francisco. dec18

Kincaid Flat Mining Company, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the ninth day of December, 1869, an assessment of two dollars and fifty cents ($2.50) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, 220 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the twelfth day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the twenty-ninth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. H. CROWE, Secretary.
Office, 220 Clay street, San Francisco, Cal. dec11

Manchester Gold and Silver Mining Company, San Francisco Lode, Monitor District, Alpine County, California.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the sixteenth day of July, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. shares.	Amount.
J L Schroeder	5	40	$20 00
A Casell	6	40	20 00
J Bandmann	7	40	20 00
C Martin	8	20	10 00
G Maho	9	20	10 00
W H Hagermann	10	20	10 00
J C Yunge	11	20	10 00
S Mayer	14	20	10 00
H Dreschfeld	15	60	30 00
L Rosenbaum	17	20	10 00
G F Sharp	12	20	10 00
H Dreschfeld	49	5	2 50
W H Sharp	3	40	20 00

And in accordance with law, and an order of the Board of Trustees, made on the thirtieth day of October, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by J. Middleton & Son, auctioneers, No. 310 Montgomery street, San Francisco, on the twenty-seventh day of December, 1869, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. CASELLI, Secretary.
Office, southeast corner Montgomery and Jackson streets, San Francisco. dec4

Pilot Mining Company—Location of Works: White Pine County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the twenty-third day of November, 1869, an assessment of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room No. 7, 428 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the third day of January, 1870, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the eighteenth day of January, 1870, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. M. HARRON, Secretary.
Office, Room No. 7, 428 California street, San Francisco, California. no27

Silver Star Consolidated Silver Mining Company, White Pine District, Nevada.

NOTICE.—There are delinquent, upon the following described stock, on account of assessment levied on the second day of November, 1869, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J M Gridley	39	740	$111 00
J R Partridge	13, 14, 17, 18 29—10 ea.	50	7 50
W P Raymond	7	50	7 50

And in accordance with law, and an order of the Board of Trustees, made on the second day of November, 1869, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, 37 New Merchants' Exchange, California street, on Monday, the third day of January, 1870, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. RUFFINGTON, Secretary.
Office, 37 New Merchants' Exchange, California street, San Francisco. dec18

New Advertisements.

SAN FRANCISCO
CORDAGE COMPANY.

Manila Rope of all sizes. Also, Balo Ropo and Whale Line constantly on hand. Mining Ropes of any size and length manufactured to order.

TUBBS & CO., Agents,
26v19-3m 611 and 613 Front street.

M. M. COOK. H. N. COOK.

M. M. COOK & SON,
MANUFACTURERS OF
LEATHER HOSE,
Belting, and Horse Collars,
801 Battery street, Corner Broadway,
SAN FRANCISCO.

☞ Belt Leather for sale. 26v19-3m

To Mining Secretaries:

You will please take notice that the copy for advertisements in the SCIENTIFIC PRESS must be handed in as early as *Thursday* evening. Our paper is published on Saturday, but the last form goes to press early on Friday, in order to afford time for sending out our large edition.

Respectfully,
Publishers Scientific Press, 414 Clay street.
DEWEY & CO.,
San Francisco, Dec. 20, 1869.

N. B.—Companies that insert advertising in our mining journal, where such notices appropriately appear, economize ONE-HALF THE COST of daily publication. Attention given to inserting notices correctly and legally. Blanks for filing out notices furnished free to advertisers.

THE GIANT
POWDER COMPANY.
BANDMANN, NIELSEN & CO.,
General Agents,
No. 210 Front Street, San Francisco. 25v19

☞ A VALUABLE BOOK FOR INVENTORS AND ARTISANS.—Dewey & Co., publishers of the MINING AND SCIENTIFIC PRESS, have just issued a neat little volume of over five hundred well executed wood cuts of the principal Mechanical movements known. These useful representations of the various appliances of power are printed side by side with explanatory notes, which makes the subject clear to every reader. Such a book should be in the hands of every mechanic, and form part of every public school library. It is a handy book, and cheap enough for every farm, shop and factory. Sent to any address from the M. & S. PRESS office, postpaid, for $1.—*New Age.*

Machinists and Foundries.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GLASGOW

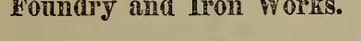
Iron and Metal Importing Company

Nos. 25 and 27 Fremont street,

SAN FRANCISCO,

Keep constantly on hand a large stock of best Bar and Bundle Iron, Boiler Tubes, Plate and Sheet Iron, Gas and Water Pipe, Anvils, Cast Steel, Gas and Water Fittings, which they offer to the trade on liberal terms.
21v16-3m W. McCRINDLE, Manage.

PACIFIC FILE WORKS,



No. 53 Beale Street, bet. Market and Mission,

SAN FRANCISCO.

Files Re-cut and warranted as good as new, with a saving of fifty per cent. REAPER AND MOWER SECTIONS MADE TO ORDER. The only establishment on the Coast. Orders from the country promptly attended to. ☞ First Premium awarded at the State Fair, 1867.
2v17-3m T. C. DURNING & CO

JAMES MACKEN,

COPPERSMITH,

226 Fremont st., bet. Howard & Folsom.

All kinds of COPPER WORK done to order in the best manner. Particular attention paid to Steamboat, Sugar House and Distillery work.

Repairing promptly and neatly attended to.
13v11

CALIFORNIA BRASS FOUNDRY.

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. P. GALLAGHER. J. H. WEED V. KINGWELL.
9v13-1y

Phœnix Iron Works.

JONATHAN KITTREDGE, Proprietor,

Nos. 18 and 20 Fremont street, near Market, San Francisco.

MANUFACTURER OF

Fire-Proof Doors and Shutters,

Wrought Iron Girders, and all kinds of Housesmith work, Bridge, Prison

FORGING AND MACHINE WORK,

IMPROVED FIRE-PROOF SAFES,

FIRE AND BURGLAR-PROOF SAFES

Of a superior make. Sole manufacturer of the celebrated

MONITOR SAFE.

BANK VAULTS AND SAFES,

Of every description, made to order at short notice. A large stock of SAFES of all kinds constantly on hand. Agency for the ISHAM KEY REGISTER BANK AND SAFE LOCK, the only first class Lock in the United States
1v17tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR,

WILCOX'S PATENT WATER LIFTERS,

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,
14v11 SACRAMENTO CITY

GEO. T. PRACY'S

MACHINE WORKS,

109 and 111 MISSION STREET,

SAN FRANCISCO.

MANUFACTURER OF

PRACY'S IMPROVED

PATENT STEAM ENGINE

GOVERNOR.

These Governors are the most sensitive built, running at a high velocity and maintaining a uniform speed.

SOLE AGENT FOR

L. W. POND'S CELEBRATED TOOLS,

— SUCH AS —

Lathes, Planers, Drills, Boring Mills, Milling Machines, Etc.,

Which I will offer at very low rates. Also,

MORSE'S TWIST DRILLS,

AND CHUCKS OF ALL KINDS.

MANUFACTURER OF

Steam Engines, and Mill Work Generally.

☞ Sole Agent for TAFT'S PATENT SHEARS AND PUNCHES. 24v19

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st, between Fremont and Beale, San Francisco.

Flue or Tubular **Boilers,** with plain circular or spiral courses. Upright Flue or Tubular Boilers, Locomotive and Marine Boilers, and Wrought Iron Tanks of every description.

Hydraulic Pipe supplied at reasonable rates. In ordering, give the quantity of water to be supplied, height of the fall, and total length of pipe, so as to enable the firm to determine the diameter of the pipe and thickness of iron to be used.

Repairs.—Boilers, Smoke Stacks, Pipes, etc., put in repair with promptness.

To Boiler Makers and Machinists in the Interior.—The firm is prepared to furnish estimates of Boilers, supply new Heads, drilled and punched, and attend to the selection and forwarding of Iron for Boilers, Pipes and other purposes.

Plans, Drawings and Specifications.—The firm is prepared to make out Plans and Specifications, receive estimates, and superintend the Erection of any Machinery that may be entrusted to their care.

To Inventors.—The firm is prepared to assist in developing the plans of those who have the ideas, but not the practical experience necessary to put the same in form, by making Drawings of their Inventions, giving them the benefit of their practical knowledge in the construction of Machinery, and attending to the manufacture and introduction of their inventions. 1v16tf

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

Corner of Beale and Howard Streets,

SAN FRANCISCO.

Steam Engine Builders, Boiler Makers, Machinists, Foundrymen, and Manufacturers of Car Wheels equal to the best imported, and guaranteed equal to Eastern Wheels.

Directors:

S. F. Butterworth,	Lloyd Tevis,	James Pollock,
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	John N. Risdon.	

JOHN N. RISDON.....President.
JOSEPH MOORE.....Vice President and Superintendent.
LEWIS R. MEAD.....Secretary.
2iv17-qy

HUGH H. LAMONT. WM. CALDWELL.

CYCLOPS MACHINE WORKS,

Construct and Repair every description of

Stationary and Marine Engines, Mill and Mining Machinery.

Special attention given to Repairing Machinery.
ap17-3m 113 Beale street, near Mission, S. F.

CALIFORNIA FILE MF'G CO.

No. 437 Brannan Street,

Between Third and Fourth, San Francisco.

W. WUSTHOFF, L. KRAMER, M. HARRIS. J. BURKE.

NEW FILES OF EVERY DESCRIPTION

ON HAND AND MADE TO ORDER.

Old Files Re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS, etc., made to order at short notice. Orders from the country promptly attended to. 9v19-qy

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel,

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

13 and 15 Fremont street, near Market, San Francisco.
10v14qr

SAN FRANCISCO

Pioneer Screen Works.

JOHN W. QUICK,

203 Fremont street, near Howard, San Francisco.

Screen Punching of all kinds and qualities for Quartz, Cement, Flour and Rice Mills, at greatly reduced rates.

ORDERS SOLICITED AND PROMPTLY ATTENDED TO.

I would call special attention to my slot cut and slot punched Screens which are attracting much attention and giving universal satisfaction, both as regards their efficiency and durability. This is the only establishment on the coast devoted entirely to the manufacture of Screens. It has furnished screens for the principal mills and firms on the coast for many years. 10v19tf

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT.

UNION IRON WORKS,

CORNER FIRST AND MISSION STREETS,

SAN FRANCISCO.

MANUFACTURE

ALL KINDS OF MACHINERY

MARINE, LOCOMOTIVE,

And Stationary Engines,

Booker Patent Locomotive Stack,

ARMSTRONG PATENT

Heater, Condenser and Filter, Combined.

BOILERS, HIGH AND LOW PRESSURE,

Pump, Pipe and Sheet Iron Work of all kinds; Quartz Crushing and Amalgamating Machinery, including High and Low Mortar for wet or dry crushing; Furnaces for roasting ores; Horn, Wheeler's, Patton's, and Belding's Amalgamating Pans and Settlers; Hendy's Concentrator; Hungerford's Concentrator; Hunt's Grinder; Blake's Crushers; Stamp Shoes and Dies of the best white iron; Russia Iron Screens, etc.; Flour Mill and Saw Mill Machinery in every variety; Hendy Gang, Saw Mill, Pumping and Hoisting Machinery; Excelsior Force Pump, for domestic, ship and mining use—the simplest and best in use; Iron and Brass Castings of every description; Steamboat Repairs; Boiler Making executed with despatch. Steam Engines and Boilers constantly on hand and for sale.

We would call particular attention to our

SCOTT & ECKART CUT-OFF ENGINE.

As a simple, effective, fuel-saving, first-class Engine, it has no equal. We have twenty-five of our Cut-Offs at works on this coast, every one of which gives entire satisfaction. We refer with pleasure to the report of the Committee on Engines at the Sixth Industrial Fair, which we annex. They say:

"*Horizontal Steam Engine of the Union Iron Works.*—This Engine is 16 inches diameter of cylinder, 3-foot stroke of piston, and is provided with Scott & Eckart's Patent Variable Expansion Valve. It is very substantially built, well proportioned, and capable of doing severe duty. This Engine was used every third day to drive the machinery of the Exhibition, *working very smoothly and steadily under all circumstances, and with great economy.* The friction brake was applied to this engine; but owing to the fact that the belt which had been provided for merely driving the machinery of the Exhibition was not of a suitable size to transmit the full power of the engine, the test was not applied above 20-horse power; *and up to this point the power was developed with the greatest possible economy in the expenditure of steam.* In speaking of the performance of this engine, the variable expansion valves of Messrs. Scott & Eckart deserve special mention of the ingenuity displayed in the arrangement of the valves and in the attachment of the same to the governor, whereby the position of the slides is changed so quickly to accommodate any change of load upon the engine *that the correct speed of the engine is maintained with* WONDERFUL UNIFORMITY *under all circumstances.* This engine will work 50 or 60 horse power with ease and economy. Awarded silver medal. Wm. Burnett, Mont'y Fletcher, John Myers."

Pickering Governors, Machinists' Lathes,

Planers, Shapers, Drills, Etc.,

On hand and for sale, Drawings furnished free of cost. Orders promptly attended to. A complete stock of fittings on hand.

☞ We are prepared to furnish all kinds of Machinery at short notice, as our facilities are unequalled on the Pacific Coast.

H. J. BOOTH & CO.

CITY IRON WORKS COMPANY.

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Steam Engine Builders, and Makers of all kinds of Machinery,

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FOUNDRY FACINGS.

BENJAMIN ELLIOT,

No. 483 Brannan street.....San Francisco,

Manufactures Foundry Facings constantly, from choice coals. Bituminous, packed in tight sacks. Anthracite and Charcoal ground together or separate, packed in barrels. Black Lead, Coke and Soapstone ground to order.

☞ Foundrymen located far from choice material, can rely on having superior Facings forwarded to order.
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CALIFORNIA TOOL WORKS,

Blacksmith and Machine Shop,

143 Beale St., bet. Mission and Howard,

SAN FRANCISCO.

All kinds of Edge or other Tools made to order. Particular attention paid to putting in order AGRICULTURAL MACHINERY. Job Grinding and Polishing by steam. Orders from the Country promptly attended to. ☞ All work warranted.
21v17-qy **J. WEICHHART, Proprietor.**

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

THEODORE KALLENBERG,

Machinist, and Maker of Models for Inventors,

All kinds of Dies, Stamps and Punches made. Also, all kinds of Small Gears cut. Repairing done on very reasonable terms, and in the best manner. ☞ No. 10 STEVENSON STREET, near First, Pioneer Mills. 25v19-3m

Blake's Patent.

THE BEST PUMP for Boiler Feeders, Breweries, Sugar Houses, Tanneries, Mining and Fire purposes, etc., is Blake's

Patent Steam PUMP

It is SIMPLE, COMPACT and POWERFUL, needs no expert to run it, and will start at any point. Is warranted POSITIVE under all circumstances. Send for a circular.

BERRY & PLACE, 112 and 114 California st., San Francisco.

HAYWARD & COLEMAN

IMPORTERS AND REFINERS

—OF—

Illuminating, Lubricating,

—AND—

PAINT OILS,

CONSISTING OF

KEROSENE, LARD, SPERM, ELEPHANT, POLAR, TANNERS, NEATSFOOT, BOILED AND RAW LINSEED, CASTOR AND CHINA NUT.

—ALSO—

Spirits of Turpentine and Alcohol.

Lamps and Lamp Stock!

An elegant and complete assortment.

SOLE IMPORTERS OF

Devoe's Illuminating Oil

PATENT CANS.

5v17-tf **414 Front street, San Francisco.**

The Perfection of Prepared Cocoa.

MARAVILLA COCOA.

Sole Proprietors—TAYLOR BROTHERS, London.

The Cocoa (or Cacao) of Maravilla is the true Theobroma of Linnæus. Cocoa is indigenous to South America, of which Maravilla is a favored portion. TAYLOR BROTHERS having secured the exclusive supply of this unrivalled Cocoa have, by the skillful application of their soluble principle and elaborate machinery, produced what is so undeniably the perfection of Prepared Cocoa, that it has not only secured the preference of homœopaths and cocoa-drinkers generally, but many who had hitherto not found any preparation to suit them, have, after one trial, adopted the Maravilla Cocoa as their constant beverage for breakfast, luncheon. etc.

"A SUCCESS UNPRECEDENTED."

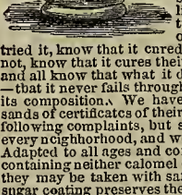
[See following extract from the Globe of May 14, 1868.]

"Various importers and manufacturers have attempted to attain a perfection for their prepared Cocoas, but we doubt whether any thorough success has been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supersedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homœopaths and invalids we could not recommend a more agreeable or valuable beverage."

Sold in packets only by all Grocers, of whom also may be had Taylor Brothers' Original Homœopathic Cocoa and Soluble Chocolate. Steam Mills, Brick Lane, London.
8v19-6m

Ayer's Cathartic Pills,

For all the purposes of a Laxative Medicine.



Perhaps no one medicine is so universally required by everybody as a cathartic, nor was ever any before so universally adopted into use, in every country and among all classes, as this mild but efficient purgative *Pill*. The obvious reason is, that it is a more reliable and far more effectual remedy than any other. Those who have tried it, know that it cured them; those who have not, know that it cures their neighbors and friends, and all know that what it does once it does always—that it never fails through any fault or neglect of its composition. We have thousands upon thousands of certificates of their remarkable cures of the following complaints, but such cures are known in every neighborhood, and we need not publish them. Adapted to all ages and conditions in all climates; containing neither calomel or any deleterious drug, they may be taken with safety by anybody. Their sugar coating preserves them ever fresh and makes them pleasant to take, while being purely vegetable no harm can arise from their use in any quantity.

They operate by their powerful influence on the internal viscera to purify the blood and stimulate it into healthy action—remove the obstructions of the stomach, bowels, liver, and other organs of the body, restoring their irregular action to health, and by correcting, wherever they exist, such derangements as are the first origin of disease.

Minute directions are given in the wrapper on the box, for the following complaints, which these *Pills* rapidly cure:—

For **Dyspepsia** or **Indigestion, Listlessness, Languor** and **Loss of Appetite,** they should be taken moderately to stimulate the stomach and restore its healthy tone and action.

For **Liver Complaint** and its various symptoms, **Bilious Headache, Sick Headache, Jaundice** or **Green Sickness, Bilious Colic** and **Bilious Fevers,** they should be judiciously taken for each case, to correct the diseased action or remove the obstructions which cause it.

For **Dysentery** or **Diarrhœa,** but one mild dose is generally required.

For **Rheumatism, Gout, Gravel, Palpitation of the Heart, Pain in the Side, Back** and **Loins,** they should be continuously taken, as required, to change the diseased action of the system. With such change those complaints disappear.

For **Dropsy** and **Dropsical Swellings** they should be taken in large and frequent doses to produce the effect of a drastic purge.

For **Suppression** a large dose should be taken as it produces the desired effect by sympathy.

As a *Dinner Pill,* take one or two *Pills* to promote digestion and relieve the stomach.

An occasional dose stimulates the stomach and bowels into healthy action, restores the appetite, and invigorates the system. Hence it is often advantageous where no serious derangement exists. One who feels tolerably well, often finds that a dose of these *Pills* makes him feel decidedly better, from their cleansing and renovating effect on the digestive apparatus.

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LOWELL, MASS., U. S. A.

Sold by all druggists and dealers in medicine everywhere. Crane & Brigham, San Francisco; R. H. McDonald & Co., Sacramento, General Agents. 25v19eowim

San Francisco Metal Market

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

FRIDAY, December 24, 1869.

IRON.—Duty: Pig, $9 per ton; Railroad, 6oc ₱ 100 ℔s; Bar, 1¢@1½¢ ₱ ℔; Sheet, polished, 3c ₱ ℔; common, 1½@1¾¢ ₱ ℔; Plate, 1½c ₱ ℔; Pipe, 1¾c ₱ ℔; Galvanized, 2½¢ ₱ ℔.

Scotch and English Pig Iron ₱ ton	$29 00	@ 33 00
White Pig ₱ ton	27 50	@ 28 00
Refined Bar, bnd assortment ₱ ℔	— 03	@ — —
Refined Bar, good assortment, ₱ ℔	— 04	@ — —
Boiler, No. 1 to 4	— 04½	@ — —
Plate, No. 5 to 9	— —	@ — 04¼
Sheet, No. 10 to 13	— 04½	@ — 5
Sheet, No. 14 to 20	— 05	@ — 5¾
Sheet, No. 24 to 27	— 05	@ — 6¾

COPPER.—Duty: Sheathing, 3½¢ ₱ ℔; Pig and Bar, 2½¢ ₱ ℔

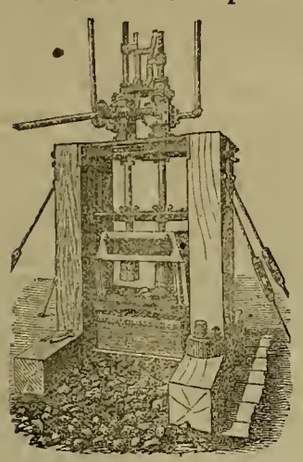
Sheathing, ₱ ℔	— —	@ — 26
Sheathing, Yellow	— 20	@ — 21
Sheathing, Old Yellow	— 10	@ — 11
Composition Nails	— 21	@ — 22
Composition Bolts	— 21	@ — 22

TIN PLATES.—Duty: 25 ₱ cent. ad valorem.

Plates, Charcoal, IX, ₱ box	12 00	@ — —
Plates, I C Charcoal	10 00	@ 10 50
Roofing Plates	10 00	@ 10 50
Banca Tin, Slabs, ₱ ℔	— 40	@ — 42½
STEEL.—English Cast Steel, ₱ ℔	— —	@ — 15
QUICKSILVER.—₱ ℔	— 55	@ — 60
LEAD.—Pig ₱ ℔	— 7½	@ — 8
Sheet	— 10	@ — —
Pipe	— 11	@ — —
Bar	— 9	@ — 9
ZINC.—Sheets, ₱ ℔	— 10½	@ — 11
BORAX.—California, ₱ ℔	— 38	@ — 40

Machinery.

THE WILSON
Patent Steam Stamp Mill.



This extraordinary Mill, now so justly popular in the East, is now offered to the miners of the Pacific Coast, Having been in operation now for about eighteen months, the Company feel confident that the

WILSON STEAM STAMP MILL,

For Durability, Efficiency,

AND ECONOMY OF WORKING,

HAS NO EQUAL.

☞ The Wilson Steam Stamp Mill is the only Steam Mill that has had the severe ordeal of practical working, and proved itself eminently successful. It is now in operation in several of the Eastern States and Territories, and gaining an envious popularity. The whole machine is so simple as to be readily understood by the most ordinary minds. In fact, its simplicity is its durability. The expense of crushing rock or cement with this Mill is less than one-half the expense of any other Stamp Mill, and less than one-half the cost. For further particulars luquire of

A. BICKNELL, Agent,
Nevada City, California,

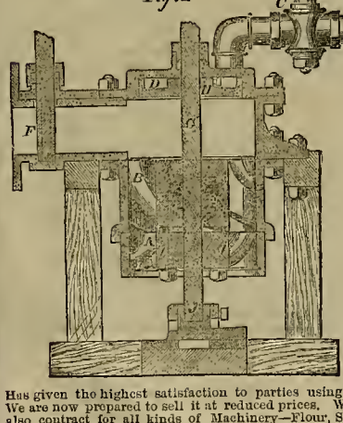
Or of THE WILSON STEAM STAMP MILL CO., 326 Walnut street, Philadelphia, Pa.

NOTICE.—All persons are hereby warned not to manufacture or use any Steam Stamp Mills that are an infringement on the Wilson Patents, as they will be prosecuted to the utmost rigor of the law.

F. R. WILSON,
20v19-tf Supt. W. P. S. S. M. Co., Philadelphia.

Lind's Improved Water Wheel

Fig. 1



Has given the highest satisfaction to parties using it. We are now prepared to sell it at reduced prices. Will also contract for all kinds of Machinery—Flour, Saw and Quartz Mill. All our work guaranteed. We will send competent men to put up our Wheels and Machinery. We contract for or do it ourselves. Our extensive acquaintance with millwrights on this coast enables us to furnish millmen with the best of workmen at short notice. Drawings for contracts furnished gratis. Send for circular.

A. LIND, Millwright,
Pacific Iron Works, San Francisco.

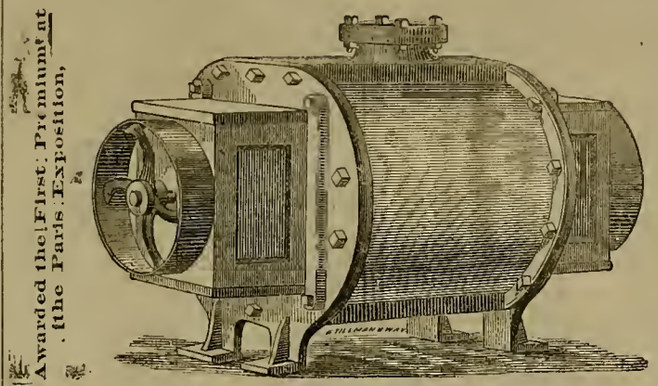
Refer to John Sime and J. Haley. 19v19-3

ROOT'S PATENT FORCE BLAST ROTARY BLOWER

MANUFACTURED BY KEEP & BARGION,

At the Globe Iron Works, Stockton, California.

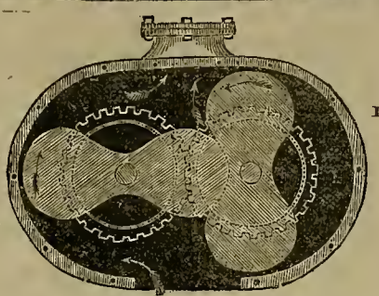
Awarded the First Premium at the Paris Exposition,



Patented Nov. 1st, 1864; July 24, 1866; and Oct. 9, 1866.

ADAPTED FOR

Smelting, Foundry, Mining and Steamships.



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CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article.

Quartz, Saw and Grist Mill Irons, Steam Engines, Horse Powers, High and Low Pressure Steam Engines, Steamboats and Propellers, made at short notice.

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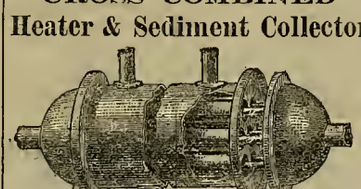
Heater & Sediment Collector



This Heater effectually prevents the collection and deposition of sediment in the boiler from impure water. From April 1, 1869, the Royalty on this Heater has been

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